Med Trib 7

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and Medical News

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California Slowdown: Crisis Continues

As private Los Angeles area hospitals closed in the wake of the physician protest over malpractice insurance rates, injured and ill were received at LA. County-USC Medical Center.

USC house staff representatives tell the press that the influx of new patients is nearly overloading their facilities.

Non-physician employees of Hollywood Community Hospital protest layoffs and reduced wages resulting from the doctors' insurance slowdown.

making rounds at press time

N.Y.C. STRIKE TOLL – Health Dept. report attributing up to 20 deaths to 1973 nursing home strike has raised hackles of Hosp. & Health Care Employees Union, which charges report was released to stave off strikes. Health Comm. Bellin says findings are part of 18-mo. study to probe strike effects in hospitals too. Dr. M. Schwartz, asst. comm., told MT "transfer trauma" was major cause of deaths and said dept. believes compulsory arbitration is only solution since traditional precautions don't work.

Cautious Use of Stimulant Drugs Favored in MBD

By Frances Goodnight
Medical Tribune Staff

WASHINGTON, D.C.—Criteria for determining if a child with behavioral problems might be helped by psychostimulant medication were outlined here by Dr. Eric Denhoff, Clinical Professor of Pediatrics, Division of Biomedical Sciences, Brown University.

Dr. Denhoff said such therapy has "a specific beneficial role" in managing crisis aspects of the condition variously labelled as hyperkinetic behavior

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Thermal 'Memory' Changes Wire Into Umbrella Filter

By Nathan Horwitz
Medical Tribune Staff

TUCSON, ARIZONA—An extraordinary new "memory metal" that exists as a thin wire at room temperature but instantly transforms itself into a mesh "umbrella filter" when exposed to body temperature in the vena cave is undergoing extensive studies at Harvard Medical School.

The filter studies are the first in a projected series examining the possible medical applications of the new alloy, which was developed by the Navy for space-flight antennae and only recently declassified for civilian use, Dr. Morris Simon, Professor of Radiology at Harvard, reported here. He spoke at the annual Science Writers Forum of the American Heart Association.

The metal, an alloy of titanium and nickel, plus traces of other elements, can be designed to "remember" and "erase" pre-printed shapes at designated temperatures. Its mode of action is not fully understood, Dr. Simon stressed. In the Harvard studies, the alloy wire is formed into the shape desired, annealed in a furnace at 1,080°F, and the shape then erased by physical manipulation at 50°F. On exposure to a temperature of 90°F, the wire instantaneously resumes the pre-imprinted shape.

Pre-Clinical Studies

The alloy's remarkable "thermal shape-memory properties," Dr. Simon noted, enable it "in effect to exist in two pre-determined forms, depending on its temperature."

In the ongoing umbrella filter studies, the straight wire, 20 mm thick and 15 cm long, is inserted into a dog's vein via a standard angiographic catheter that is used to inject contrast medium,

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In 'Quiet Traffic' Zone

Normal Noises Raise BP, Induce Cardiac Stress

By Fraser Kent
Special Tribune Correspondent

MIAMI—Noise alone can apparently increase blood pressure and heart rates substantially, and those elevated levels persist throughout exposure, according to University of Miami researchers.

The noise is not from a nearby jet plane or a rock band, but that found in the "quiet traffic" zone around a mid-city hospital, said Dr. Ernest A. Peterson, Associate Professor of Otolaryngology at U-M.

"We used levels far below those that affect human hearing," he explained. "This was not tooth-rattling noise, but the kind of thing we listen to every day. To me, that's what makes this study so ominous."

Nor need it be continual exposure; intermittent bursts of sound regularly produced brief peaks on the blood pressure and heart rate charts, with a gradual increase in baseline levels

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Future of HMOs May Hinge on Senate Action

By Alan Fitzgibbon
Special Tribune Correspondent

WASHINGTON, D.C.—The Senate is expected within the next month or two to begin considering a series of amendments to revive the faltering health maintenance organization (HMO) industry.

The amendments, which the House passed overwhelmingly in November, would correct what almost everyone

First of a Series

here now considers defects in the Health Maintenance Organization Act of 1973, which was intended to make periodically prepaid group health care plans economically competitive with traditional fee-for-service health care.

Even the sponsors of the 1973 law today concede that it was poorly drafted—largely because it was a mismarriage of divergent philosophies—and that unless it is overhauled the HMO industry stands little chance of making a go of it.

Though it no longer looks as though 1,700 HMOs will provide health services for 40 million Americans by 1980, as was predicted a few years ago, HMO proponents still think that the organizations are "an industrial revolution in medical care" that will eventually restructure the national health care system, help control ever-increasing medical costs, and rationalize health care delivery.

Those were President Nixon's goals when he first popularized the health maintenance organization as both a concept and a name in his February, 1971, message to Congress. Though the Nixon administration radically moderated its support of HMO development two years later, when Congress was debating the now-criticized act, some observers believe it was the former President's only real initiative in the health field.

The 1973 act and the problems it has since created are essentially the product of a compromise between the views of Sen. Edward M. Kennedy, chairmen of the Senate's health subcommittee, and members of the House health subcommittee led by their chairman, Rep. Paul G. Rogers.

Senator Kennedy and his staff became deeply involved in HMO legislation in early 1973, when the senator was promoting a national health insurance bill that would have vastly expanded the government's role in the health care system and increased ben-

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Biochemical, Genetic Factors Underly Major Mental Ills

By FRANCES GOODNIGHT
Medical Tribune Staff

NEW YORK—In the face of claims that mental illness is a "myth" or a "creative adaptation," what evidence is there that major mental disorders are indeed illnesses, with biochemical bases?

Dr. Seymour S. Kety posed this question here, and in a wide-ranging discussion of findings reported over the past two decades the Harvard investigator cited what he called "substantial indications" that both schizophrenia and manic depressive illness have biochemical substrates.

"We now have information that they are illnesses, that they do comply with the medical model of illness," Dr. Kety told a news conference held before he gave the Grass Foundation Lecture at the annual meeting of the Society for Neuroscience.

No Uncritical Advocate

If this is true, Dr. Kety continued, and if the medical model has validity, then biologic science and the scientific method "have something to offer."

Describing himself as someone who has "certainly not been an uncritical advocate" of the biologic approach, he said he is now optimistic that contributions made by the neurosciences to the elucidation of causes of major mental illnesses will help lead to "rational, efficient, and specific treatment and rational prophylaxis."

The evidence for biologic substrates considered most compelling by Dr. Kety, who is Professor of Psychiatry at Harvard Medical School, is that provided by studies showing a strong genetic component in many cases of schizophrenia and the affective disorders.

Even the earliest investigations had suggested that manic depressive illnesses and schizophrenia "run in families," he noted. But since many attributes are family-associated—"wealth, poverty, and pellagra, for example"—it has been necessary to look for proof that genetic factors actually play a causative role.

In the case of manic depressive illnesses, Dr. Kety believes such proof has been supplied by evidence that certain forms of these disorders show an X chromosome linkage. They occur in families in association with established X-linked traits such as color blindness and specific blood groups, and are transmitted in a pattern consistent with such traits.

Consistent Pattern

Although he cautioned that not every type of manic depressive illness demonstrates this association, he thinks that when the connection is present it follows a pattern too consistent to be explained on a nongenetic basis.

Research on schizophrenia during the past decade has also produced more evidence for the importance of genetic factors, Dr. Kety continued.

In studies that he and colleagues conducted, a total of 74 schizophrenics were identified in a sample of 15,000 adopted individuals. These index patients had about 500 biological and adoptive relatives whose records could be traced, and in some cases the relatives could be interviewed without knowledge on their part (or that of the interviewer) of a relationship to the patient. The sample provided appropriate controls.

"After results were analyzed, the pattern was unmistakable," Dr. Kety commented. "A high incidence of schizophrenia was found only in biological relatives. The incidence among adoptive relatives was no higher than in the general population."

Additional confirmation came when the investigators were able to rule out the possible influences of *in utero* environment and early mothering provided by biologic mothers in a sizable number of index cases—a subsample of biologic paternal half-sibs, having the same father but a different mother.

Again, biologic relatives of these schizophrenics showed a higher incidence of schizophrenia while the biologic relatives of controls had an incidence like that of the population at large, he said.

Dr. Kety emphasized, however, that the form of the genetic transmission of schizophrenia is still unknown and that "we can't even say all cases are genetically determined." Many of the index patients do not have the illness in biologic relatives, he said, and "even though this doesn't mean they are free of the genetic characteristics—genes don't always express themselves—the possibility is still open that schizophrenia remains a heterogenous collection of disorders."

Genetics Crucial

What really has been found, in his view, is evidence that 50% or more of the cases of schizophrenia diagnosed in the adoption studies had an important genetic component, and that genetic factors are also crucial to the development of a "substantial number" of manic depressive illnesses.

"If a genetic component is present in both of these major disorders," he said, "that means there has to be a biological substrate."

Dr. Kety calls the search for such biochemical bases "more promising than ever before" because of advances in knowledge about the structure and function of synapses and identification of the neurotransmitters associated with particular pathways, functions, and behavioral states.

He commented that at about the same time that noradrenaline and other neurotransmitters were found to influence synapses in the brain, investigators independently discovered several drugs capable of exerting important effects on mood and on thought disorder.

"For the first time, psychiatry had available certain drugs with very specific effects on symptoms of mental illness," he said. "And because of the fantastic developments in neuroscience, electron microscopy, neurobiology, neurochemistry, and other disciplines, we now know a great deal about how these drugs act—and that each one acts on quite specific synapses."

Goats Aid Studies

Rural families enjoy raising baby pygmy goats which, as adults, enter pregnancy studies at nearby U. of Oregon. Fladings shaw pregnant goats and pregnant women require more oxygen when active than do nonpregnant females. Researchers want to know if activity deprives the fetus of needed oxygen.

Dr. Kety cited as one example the discovery that all agents effective in schizophrenia have specific actions in blocking dopamine receptors.

Good Correlation

"We can now show very good correlation between the ability of drugs to bind to dopamine receptors and their ability to produce therapeutic effect in schizophrenia," he said, adding that an effective agent tends to produce side-effects resembling parkinsonism.

Dr. Kety believes it would be an "oversimplified deduction to conclude that since all drugs effective in schizophrenia block dopamine, therefore the lesion in schizophrenia is an overactivity of dopamine synapses."

There are many instances, he commented, in which a drug acts on a normal system to produce a therapeutic effect by stimulating—or blocking—the normal system, which in turn has indirect effects on some other system that is really disturbed.

But Dr. Kety is equally convinced that continued and expanded research on the mechanism of action of drugs used to treat mental illnesses, and on the interrelationships of neurotransmitters to behavior at very basic as well as clinical levels, "cannot help but contribute" toward an understanding of these disorders.

"And with understanding will come more specific treatment and the ability to prevent them," he said.

English by Home Study

PISCATAWAY, N.J.—A personalized program utilizing tape recordings for independent home study of American-style English has been developed for foreign-born physicians, medical students and other professionals by the speech therapy study group at Rutgers Medical School of the College of Medicine and Dentistry of New Jersey.

Normal Noises Raise BP, Induce Cardiac Stress

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sending the peaks higher and higher.

Several surveys have shown that high-level noise degrades hearing, but this is the first controlled study with primates to implicate low-level sound alone as a cardiac stressor.

Dr. Peterson and Dr. Jeffrey Augenstein, a surgical resident at Jackson Memorial Hospital with a Ph.D. in experimental psychology, have worked with only a few rhesus monkeys to date, but they are convinced the results of their pilot study justify further research in this field.

Three Experiments

The experimental animals were divided into three groups, each with a monitoring catheter surgically implanted in the abdominal aorta via the femoral artery.

One monkey was used as a control, to measure the effects of the restraints, the monitoring and the acoustically isolated environment to which all the animals were exposed. This provided a "normal" or standard measurement from which the effects of noise alone could be inferred.

A second monkey was exposed to brief bursts of sound at 112 db ("like a loud raspberry or Bronx cheer," Dr. Peterson said) at varying intervals during the day. Except for this "impulse noise" stimulus, the monkey stayed in a relatively quiet area.

During each burst of sound, blood pressure peaked sharply "with about the same increase each time," he said. The baseline gradually rose by about 28%, with the peaks running parallel to the elevated rate and never returning to the earlier "normal" measurement. There was no comparable increase in the heart rate.

A third monkey was exposed to endless tape recordings of urban traffic sounds (cars, trucks, overhead aircraft, conversation, whistles) ranging from 61 to 89 db 12 hours a day for 30 days.

Outwardly Calm

Blood pressure and heart rates went up at the beginning of this experiment, as had been expected, but they remained elevated even though the animal seemed outwardly to calm down and adjust to the noise. After two weeks, the animal's blood pressure and heart rate dropped at night (when the recording was shut off) back to baseline levels.

But it also developed an "anticipatory response" three to four hours before the noise was scheduled to resume at 6 a.m., Dr. Peterson reported. The blood pressure would start to rise, reaching maximum levels just before the tape recording was turned on.

The researchers admit the limitations of a pilot study with only three monkeys, in whom possible hearing loss was not measured. "The period of exposure has been too short to allow firm generalizations to be made regarding the years-long exposure which pres-

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New Center Stresses Preventive Cardiology

By MICHAEL HERRING
Medical Tribune Staff

NEW YORK—"Since hypertension is the number one risk factor for cardiovascular degenerative disease, which in turn accounts for fully half of all deaths, the idea here is to get these patients 'up front' and practice preventive cardiology."

This was Dr. John Laragh's description of a new Cardiovascular Center, which opened here recently at New York Hospital-Cornell Medical Center (NYH-CMC). Dr. Laragh, who is Professor of Medicine and will direct the Center, told a press conference that the main thrust of the program is "to find the silent killer—asymptomatic hypertension—and maintain the patient's health with preventive therapy."

The center is the second of its kind in the nation, Dr. Laragh said, and the first to stress preventive cardiology. In addition to its preventive emphasis, the Center will coordinate the efforts of physicians and surgeons dealing with all phases of the degenerative disorders of the cardiovascular system that lead to stroke, heart attack, or kidney failure, Dr. Laragh added.

Detection and Prevention

However, the center's specialty will be to find and treat patients before these "end-stage phenomena" appear, he stressed. The four-part program to accomplish this includes on-the-job screening and treatment of asymptomatic hypertensives (directed by Dr. Michael Alderman), preventing further complications in asymptomatic high-risk hypertensives who turn up in longitudinal studies (directed by Dr. Lawrence Hinkle), diagnosis and treatment of symptomatic patients and referrals, and arresting end-stage events and providing intensive care for patients with angina pectoris, heart attack, and peripheral vascular occlusion (directed by Dr. Stephen Scheidt).

Patients, Dr. Laragh noted, are drawn from the Ambulatory Services of NYH-CMC, and from referrals.

The preventive approach began with Dr. Laragh's well-known "renin-angiotensin-aldosterone axis as a coherent biologic control system for regulating blood pressure." This improved understanding of the cardiovascular system "suggested outlines of a 'hormonal profile' by which clinicians or investigators might locate and define the patient's physiologic derangement and determine the relative predominance of vasoconstrictor or volume factors."

The approach helps in designing specific treatment and in predicting which drugs are likely to be effective, he added. "Moreover, it may provide prognostic information in predicting the individual patient's susceptibility to major cardiovascular consequences."

The recognition of the renin axis as a cybernetic system for blood pressure control has also led to the center's view of hypertension as a spectrum of disorders, in terms of either primary (causal) or predictable reactive deviations in the renin-angiotensin-aldosterone control system, Dr. Laragh explained. These derangements appear in essential hypertension, primary aldosteronism, malignant hypertension, renal hypertension, and oral contraceptive hypertension, he noted.

Treatment at the center will vary according to the patient, but therapy for many will include the highly specific anti-renin agent, propranolol. Even though it is not indicated for hypertension control, Dr. Laragh indicated plans to use it freely.

"Propranolol is on the market for other uses, but not for high blood pressure. However, aspirin is not indicated for stroke either, but if a drug is on the market and enough doctors use it as they see fit, regulators look pretty silly trying to stop them," he told the press conference.

For Longer Life

"Other drugs with serious side effects used to give the hypertensive a choice between a short merry life and a long miserable one. But beta-blockade drugs like propranolol have little or no side effects and some patients even feel better," he added. Lowering high blood pressure unquestionably prevents stroke, kidney trouble, and possibly myocardial infarction, he said, and it is well-known that lower blood pressure, even within the normal range, always means longer life.

"Propranolol lowers renin secretion by the kidney, either directly or via the brain. The neural control of both heart rhythm and blood pressure by beta-blockade drugs is an incredible pharmacological breakthrough," Dr. Laragh said. "These drugs are in common use in Europe, with a number of analogs, and we intend to use them here."

In addition to providing care of patients and research into all forms of cardiovascular disease, the center will undertake the training and retraining of physicians in related fields, he added. Other services at NYH-CMC cooperating with the center's program include Peripheral Vascular Disease, Cardiovascular Surgery, Pediatric Hypertension, Pediatric Cardiology, the Rogosin Kidney Center, and Clinical Pharmacology.

"Preventive medicine is the way of the future," Dr. Laragh told the press, "especially in treating cardiovascular disease. While cancer seems to have a bad name that people don't even like to use, over a million people a year die from diseases of the heart and blood vessels. We seem to accept this as a natural course of events, waiting until the devastation occurs and then moving in on the dying patient.

"However, there is a law of diminishing returns in this approach, and our goal is to anticipate the patient with a pain in the chest, before the pain occurs."

The center, he added, is a group of doctors with the common mission of maintaining the well-being of the asymptomatic hypertensive. According to the center's estimate, their work is well cut out for them: of 20 to 25 million hypertensive Americans, half are unaware of it, only half of those who know it are being treated, and only half of those treated are under effective control.

Propranolol Backed

► The efficacy of Dr. Laragh's planned use of propranolol for hypertension was supported by a report from Dr. R. C. Hayton, which appeared in the November, 1975, issue of *Canadian Family Physician*.

Propranolol, Dr. Hayton said, has been used for some seven years as an antihypertensive agent and works by reducing cardiac output, depressing renin secretion, and by reducing blood pressure in both lying and standing positions. "When used in combination with other antihypertensives, it may counteract some of the other drugs' undesirable effects," the Canadian cardiologist reported.

Dr. Hayton, who is Professor of Medicine at the University of Saskatchewan, noted that propranolol is "most effective" in hypertensive patients with high or normal renin levels.

"Serum renin levels are not usually readily available, in which case the patient should be started initially on a diuretic," he said. "If this is unsuccessful, propranolol could then be added as a second line drug either with or without another agent. If propranolol is given with hydralazine, it is best to start both at a low dose. One could start with 10 mg of each medication or 20 of propranolol and 10 of hydralazine three to four times a day. One usually gives a slightly higher dose of propranolol than hydralazine.

"Propranolol may be gradually increased to a dose of 160 mg a day. Extremely high levels of propranolol have been used in Europe in treating hypertension and have proven successful. Although markedly high doses are seldom used in this country, Europeans have shown that almost everyone will respond to propranolol if the dose is increased to high enough levels; doses up to 2,000 mg daily have been used."

Cystic Fibrosis Kiss

"Kiss test" for cystic fibrosis is demonstrated by Oregon's First Lady Pat Straub and cystic fibrosis poster child Tony DiProfio. Skin of child with the disease tastes salty.

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Cautious Drug Use Urged in MBD Children

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syndrome (HBS) and minimal brain dysfunction (MBD).

"When used properly, the medication is a valuable and safe pediatric tool in both diagnosis and treatment," he reported to the American Academy of Pediatrics.

Dr. Denhoff emphasized, however, that stimulant therapy for the hyperkinetic child should be administered in conjunction with other modalities of treatment—appropriate teaching, counseling of parents, behavior modification, and other methods of improving socialization. Medication alone, he warned, is "not effective in long-term usage."

Discussing patient selection, Dr. Denhoff said that specific techniques for identifying the child who will respond to stimulants are "scarcely better today" than they were 30 years ago. Decisions on the need for medication or about the type to be used still depend largely on clinical criteria, he noted.

Attention Span

One objective approach advocated by Dr. Denhoff is measurement of the attention span. In his opinion, teachers are in the best position to evaluate this factor because they see the child daily. A teacher can be supplied with an objective rating scale to assess samples of "on task" and "off task" behavior during various school activities, he pointed out, and can also observe and rate episodes of misbehavior.

"A child whose ratings fall within the lowest quartile of his class warrants treatment," Dr. Denhoff said.

Among test procedures that can be undertaken by physicians themselves or by qualified aides, he cited measurement of reading time and measurement of the length of sustained attention in copying letters or a paragraph.

Subjective data to support a diagnosis of hyperkinetic behavior syndrome or minimal brain dysfunction can be obtained from the child's history, physical examination, psychological and educational testing, and electroencephalogram, Dr. Denhoff said.

He considers a history of anoxia, trauma, or infection during the perinatal-infancy period, and a persistance of hyper- or hyporeactive behavior during the first year, to be "suggestive" of the syndrome. Studies indicate, he added, that about 30% of hyperkinetic children will be found to have parents who say that they themselves were either hyperkinetic or had a learning disability.

A trial of medication has value in aiding diagnosis, according to Dr. Denhoff. The fact that drug responders can be differentiated from nonresponders helps the clinician decide "whether the problem resides primarily within the child or stems from his environment."

What about the arguments that drug therapy has no role in situations where children—normal or handicapped—are behavior problems because of environmental overdemands?

In such cases, Dr. Denhoff commented, the removal or lessening of the offending stimulus can result in "striking improvement."

But the problem is that HBS-MBD children "can never respond quickly enough to meet adult expectations, and crisis situations develop that require quick modifying action," he said.

Comprehensive Management

Citing controlled studies of dextroamphetamine or methylphenidate, the pediatrician pointed out that these agents change unacceptable patterns of behavior into more acceptable ones especially by improving short attention span and immediate memory.

"Thus, medication should not be used as a last resort but should be incorporated promptly as part of a comprehensive management plan in cases where inattentive and disruptive behavior interferes with optimal performance," he advised.

Dr. Denhoff takes a negative view of the value of diet manipulations in hyperkinetic children, although he agrees that "it makes sense to recognize that a child may become irritable when he chronically eats foods or additives which he cannot tolerate."

But in his opinion the theory that additives, food allergy, or hypoglycemic reactions are the basis for all HBS-MBD cases "does not add up," and rigid adherence to a diet established by provocative food tests remains "scientifically unsound."

The megavitamin-therapy concept is also discounted by Dr. Denhoff, who said he had tried this approach without success in 50 children.

'Health Visitors' Would Help Prevent Child Abuse

Medical Tribune Report

DENVER — Infants and young children would benefit from a compulsory, comprehensive, and universal system of home service by "health visitors," according to Dr. C. Henry Kempe, Professor of Pediatrics and Microbiology, University of Colorado Medical Center, and director, National Center for Prevention of Child Abuse.

A trained lay person who would begin visits to the home soon after the birth of each baby, the health visitor should be "a nonthreatening, supportive link to the private and public health care system," Dr. Kempe explained.

Schizophrenia Held 2 Diseases Needing Different Therapies

Medical Tribune Report

SANTA MONICA, CALIF.—Although strong genetic, clinical and diagnostic evidence suggests that there are at least two types of chronic schizophrenia, clinicians who treat the disease with drugs and researchers who are looking for the biochemical roots of schizophrenia act as if they were the same illness, according to Dr. George Winokur, of the Department of Psychiatry, University of Iowa College of Medicine.

From a diagnostic point of view, it is clear that chronic schizophrenics fall into two distinct classes: paranoid and hebephrenic, Dr. Winokur told the 1975 Symposium of the Intra-Science Research Foundation. In paranoid schizophrenia, the age of onset is from 12 to 43 years, while hebephrenic schizophrenia appears in an age range from 16 to 77 years, he said.

Clinically, hebephrenics are more frequently catatonic and have thinking disorders along with personality disintegration, while paranoid schizophrenics have persecutory delusions but can function better in their occupations than hebephrenics can.

Strong evidence for a different genetic basis for the two types of schizophrenia come from family studies (carried out in Germany, Sweden, the United States and elsewhere) which show that from two to four times as many hebephrenics are likely to have schizophrenia in their families as paranoid schizophrenics are, he said. In addition, a Swedish study involving 120 Laplanders showed that 90% had chronic catatonic hebephrenic schizophrenia, but none the paranoid type.

Drugs Wrongly Applied

The distinction between the two forms of the disease should be taken into consideration when attempting to treat schizophrenia with drugs designed to correct a specific biochemical flaw, Dr. Winokur emphasized. For example, he said, a disturbance of serotonin metabolism has been linked to amphetamine-induced psychoses and theoretically to the symptoms of paranoid schizophrenia. Yet, while the phenothiazine tranquilizers can ameliorate the amphetamine psychoses, there is little evidence that the drugs get rid of the persecutory delusions of paranoid schizophrenia.

"In fact, one study indicated that chronic schizophrenics showed a worsening of hallucinations and delusions after treatment with phenothiazines," Dr. Winokur said.

"If paranoid symptoms or paranoid schizophrenia do not respond to phenothiazines, one must question whether a dopamine hypothesis is really relevant to schizophrenia, particularly paranoid schizophrenia," Dr. Winokur said. "If you're going to do drug studies and postulate a particular kind of hypothesis, you must have a homogeneous group. But at this time, all the chronic schizophrenics together, we may be working with more than one illness."

'Novel Regimens' Opposed in Sex Diseases

Medical Tribune Report

TUCSON, ARIZ.—Tips on diagnosis and treatment of sexually transmitted diseases (STD) were the topic of a recent presentation here by Dr. Franklyn N. Judson, Director of the Disease Control Service and Medical Director of the Denver Metro Health Clinic.

Addressing the American Medical Women's Association on gonorrhea treatment, Dr. Judson cautioned against using "novel regimens, newer and more expensive antibiotics not proven effective in gonorrhea, and regimens of less than the recommended dosages."

He also noted that a study at his clinic of 679 sexual contacts of gonorrhea patients showed that 54.7% of the former were also infected. "The onus is therefore on the physician who treats gonorrhea (or syphilis) to attempt to obtain contact data and either act upon it or refer it on to a VD investigator," he said. However, "the lion's share of gonorrhea morbidity and cost" may result from female pelvic inflammatory disease.

Syphilis, he said, "remains a relatively uncommon STD," with male homosexuals comprising some 50% of all cases. There is also "no clinical evidence that syphilis has become more resistant to antibiotics."

Because syphilis serology probably causes the "greatest physician confusion" regarding diagnosis, he added that, while the fluorescent treponemal antibody absorption test (FTA-ABS) is more specific and sensitive under ideal conditions than the VDRL, it is also more costly and technically difficult.

"Furthermore . . . a disturbingly large number of low grade false positive FTA-ABS reactions can occur."

Again, because except for early primary disease the FTA-ABS remains reactive once it becomes reactive, it cannot be used to confirm a cure, while the VDRL "should drop in titer and become non-reactive within six to 18 months of successful treatment."

TPI Test No Longer Done

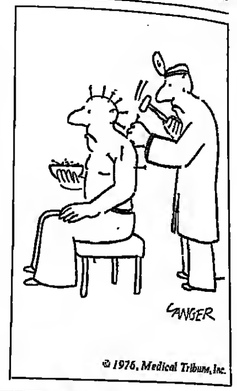
Dr. Judson also mentioned that the T. pallidum immobilization test (TPI) is no longer performed by the Center for Disease Control in Atlanta because of the more sensitive and easily performed microhemagglutination technique (MHA-TP). The MHA-TP, he said, also has the advantages of automation and quantification.

Nongonococcal urethritis (NGU), probably the most common STD of men, is "a disease in search of an etiology," Dr. Judson said. It is diagnosed by exclusion, "when both the gram-stained smear and Thayer-Martin culture of the urethral exudate are negative for gonococci." In Seattle and Great Britain, Chlamydia trachomatis has been incriminated in many cases but it remains to be seen how true this is elsewhere. While most cases will remit spontaneously, Dr. Judson recommended 500 mg tetracycline, q.i.d., for a week. The usual loading dose of 1,500 mg. he believes, is unnecessary in multiple dose regimens and may add to the incidence of nausea and vomiting.

Trichomoniasis, Dr. Judson continued, "may be the most common of the sexually transmitted diseases and ranks as a major source of low-grade morbidity." Unfortunately, recent reports have indicated that metronidazole, the only available systemic agent for treatment of trichomoniasis, may be carcinogenic in mice, Dr. Judson noted. He therefore cautioned that the minimum effective regimen be used.

Regarding genital herpes simplex, Dr. Judson pointed to recent concern that topical application of photoactive dyes, originally publicized as an effective cure, "could alter the virus in such a way that it becomes carcinogenic." Controlled studies have also shown that the therapy is not effective.

In view of these findings, and the strong link between untreated HSV-2 and cervical cancer, Dr. Judson concluded that "at the present time there is no safe or effective treatment for genital herpes."



Long Life Families Sought

Medical Tribune Report

CINCINNATI—Researchers at the University of Cincinnati Medical Center are seeking the participation of families with histories of long life in studies to confirm the preliminary finding that high density lipoproteins in the blood may be associated with exceptional longevity. Physicians who know of such families are asked to have them write to Dr. Charles J. Glueck, General Clinical Research Center, Cincinnati General Hospital, Cincinnati, Ohio 45267.

Research Goal: Regeneration of Amputated Limbs

By ANASTASIA TOUFEXIS
Medical Tribune Staff

WASHINGTON, D.C.—Man may eventually be able to regenerate amputated limbs in much the same way as the newt, crab or salamander, according to Dr. Dan Neufeld, Assistant Professor of Anatomy at George Washington University, Washington, D.C.

For the past three years, first at Tulane University in New Orleans and now at George Washington University, Dr. Neufeld has been experimenting with adult white mice in an attempt to extend regenerative ability to mammals. So far, he has succeeded in altering the internal structure of toe stumps following amputation to closely resemble the structure of a newt's toe stump during natural regeneration. The transformation of anatomical structures is clearly visible under the microscope, he says.

"The next step is to induce an outgrowth," Dr. Neufeld told MEDICAL TRIBUNE, "and I'm convinced that it's possible."

Project Changed View

Dr. Neufeld was not always so convinced. In fact, "I began with the belief that mice and other mammals can't regenerate—and I wanted to find out why this was true," he recalled.

The project however, led in the opposite direction. Working with Dr. S. Meryl Rose, recently retired Professor of Anatomy in Tulane University's School of Medicine, Dr. Neufeld found that he could artificially produce a blastema-like groups of cells in the toe stumps of mice by following a certain course of treatment. Newts, eraba, salamanders, tadpoles, starfish and some insects are able to spontaneously regenerate limbs lost to injury or predators.

Although the mouse stump cells as yet do not divide and proliferate, formation of the embryonic-like cells is a major step toward regeneration, said Dr. Neufeld, since blastemas do not normally appear in adult animals that do not regenerate.

Dr. Neufeld combines chemical and surgical treatment with the normal healing process to produce the blastema-like grouping.

After amputating the middle toes of each hind foot of the experimental mouse, he waits four weeks while osteoclasts remove dead bone from the wound site. "You have to get rid of dead bone before a viable bone base for an outgrowth can be formed," he said.

After 28 days the wound is soaked in saturated salt water "because experiments have shown that if you traumatize a wound stump enough, you can encourage an outgrowth."

Injections of cortisone and other chemicals remove fibrous tissue in the dermis so that the epidermis and underlying tissue are in close contact. Dr. Neufeld also reopens the wound to remove dermis that forms as part of the normal healing process in some animals but not in regenerating animals. The thick epidermal layer is carefully maintained since it is needed for regeneration.

As a final step, Dr. Neufeld transfers a nerve bundle from an adjacent toe through the foot to the amputated stump because experiments have shown that additional nerve supplies aid in regrowth.

Encouraging Results

Dr. Neufeld said that, when examined under the microscope, the anatomical structure of mouse stumps 11 days after treatment shows a marked resemblance to newts' regenerating stumps at the same stage. The structure is also dramatically different from that found in untreated, normally healing mice, he said.

"Although I haven't achieved an outgrowth from the mouse toe stump at this point, I'm very encouraged," Dr. Neufeld said, "because I have been able to produce the large group of embryonic cells needed for regeneration. The next step is to make them grow rapidly."

And if mice can grow replacement toes, why not other mammals? "The question in my mind has always been: Can man regenerate?" Dr. Neufeld continued. "I feel quite sure that he can. I'd give up on the project if I didn't believe this."

Diabetes Age Lower

Medical Tribune Report

INDIANAPOLIS—The age at which childhood diabetes is diagnosed in Erie County, N.Y., has gone down over past five years, Dr. Harry A. Sultz, epidemiologist and Professor of Social and Preventive Medicine, State University of New York at Buffalo, told a meeting of the American Diabetes Association.

Prior to 1970, children in Erie County diagnosed as diabetic were most often between the ages of nine and 11, Dr. Sultz reported. However, since 1970, more diabetic children in the same population have been diagnosed at younger ages.

Dr. Sultz, who last year postulated an association between childhood diabetes and mumps virus, said that "When beginning our recent study, we had expected to find childhood diabetes would decline in the face of rising levels of immunization against mumps, but this was not the case."

Normal Noises Raise BP, Induce Cardiac Stress

Continued from page 2

ently confronts city dwellers," Dr. Peterson said.

In this ongoing study, there has not yet been an opportunity to see if blood pressure and heart rates return to normal when the exposure to noise is discontinued or diminished, he added. It would obviously be unethical to induce hypertension in human subjects by this method until it is known whether the results are reversible.

Major Implications

If the work can be replicated and if the results may be extrapolated to man, it could have several major implications, the researchers said. Among them:

- Present sound levels in and around city hospitals may be increasing blood pressure and heart rates enough to jeopardize or at least slow patient recovery. Jackson Memorial Hospital, for example, immediately began an anti-noise campaign when the staff learned the results obtained with tape recordings made just outside that hospital.
- People living near airports or working in noisy factories should be warned about the effect of noise on their health as well as on hearing. The environmental Protection Agency estimates at least 35 million Americans never escape noise and that 800,000 live with noise levels comparable to those used in this study.
- Inner city noise may be one of the many factors in the high hypertension rates observed among American blacks living in urban areas. Those living in quieter rural or suburban areas have shown consistently lower rates.

Writing in the *Journal of the National Medical Association* (March, 1975), Dr. Chester M. Pierce, Professor of Education and Psychiatry at Harvard University, said inner city noise also stresses that population by depriving them of sleep.

Urban Level High

Hundreds of thousands are affected, with chronic changes in sleep physiology producing "negative changes in mentation" and behavioral patterns.

"Police, fire and ambulance sirens routinely but unpredictably penetrate the night," he wrote. "Inner city neighbors are lively in their interchanges, which vary from vociferous domestic squabbles to foot-thumping dancing. People are up on the streets all night long and the noise is ever-present."

This "unpredictable, uncontrollable noise," combined with overcrowding in thin-walled apartments over a period of years, could bring about both psychologic and physiologic changes, Dr. Pierce suggested. These exert "a powerful, incessant but largely unrecognized influence on the lives of blacks."

The University of Miami researchers have reported on early stages of their experiment to the Florida branch of the American Acoustical Society and are now seeking grants that will enable them to verify and expand their preliminary observations.

Psychosurgery Stopped In Czech Hospital

Medical Tribune World Service

PRAGUE—Psychosurgery involving creation of stereotaxic lesions in the posterior hypothalamus, advocated in some centers as a means of sedating extremely aggressive psychopathic behavior, has been abandoned at Bratislava University Medical School, Bratislava, Czechoslovakia, according to Dr. G. Patoprsta, of the Department of Neurosurgery.

The change in policy came about, Dr. Patoprsta told the International Congress of Pathophysiology, because 60% of 20 recent patients showed moderate to severe and progressive memory loss after the operation.

Postoperative memory defects were most serious and progressive in the more intelligent patients.

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Behavioral Approach Stops 64% in Anti-Smoking Clinic

By MICHAEL HERRING
Medical Tribune Report

SUFFOLK, N.Y.—A stop-smoking clinic based on "behavioral maintenance" has recently shown a 64% success rate, after two years of follow-up on some 890 ex-smokers. According to Dr. Oscar S. Cunanan, director, this unusually high figure even includes those who began the program but dropped out.

The clinic, sponsored by the American Cancer Society, owes much of its success to "the extensive training of sensitive, knowledgeable moderators, small groups (no more than 10) with emphasis on participation, and especially the commitment to quit, established in a pre-clinic screening interview," Dr. Cunanan said in an interview with MEDICAL TRIBUNE.

The quitters, many of them physicians, have used alternate activities such as taking a shower, knitting 100 stitches, or telephoning their assigned "buddies" for emotional support when the urge to smoke is strong, Dr. Cunanan said.

An Ex-Smoker Himself

Dr. Cunanan, who is also director of pulmonary medicine, Pulmonary Care Institute, Suffolk Developmental Center, and Chairman of the Antismoking Committee of the A.C.S., is himself an ex-smoker. In the antismoking clinic, which consists of five sessions (two the first week, one each week thereafter), "solutions are usually formulated by the smokers themselves, under the moderator's direction," he said.

At the beginning, smokers are evaluated according to the reasons they smoke. "People have to know what category they belong to so they can counteract the symptoms," Dr. Cunanan believes. The categories are: stimulation (10% of all smokers), handling (10%), relaxation (15%), habit (10%), crutch (30%), and craving (25%).

The stimulation smoker feels an increased sense of energy. In order to stop, a safe substitute source of stimulation, such as a brisk walk, modest exercise, gum, or a new hobby, is needed.

The handling smoker enjoys manipulating objects. This type of smoker is advised to pick something equally satisfying to manipulate—toying with a pen or pencil, doodling, fingering a coin or a plastic cigarette.

Relaxation smokers smoke for relaxation or to enhance pleasurable feelings. For this type, a substitute form of relaxation or an honest consideration of smoking's harmful effects may be enough.

Crutch smokers light up when they are upset, tense or angry. Craving smokers look forward to the next cigarette before putting out the present one.

"Crutch and craving smokers should quit cold turkey, because they are really hooked," Dr. Cunanan said. "Quitting is very difficult for these types and we have to be very, very strict with them."

Dr. Cunanan also uses films of smoking's effects, but not many fear techniques. "We stress open discussion. Fellow-smokers sharing strength and hope with each other is the most successful means to quitting."

Follow-up is extensive, with individual checks after one week, one month, three months, six months, eight months, and one year. After that, follow-up is every three months for another year-and-a-half, Dr. Cunanan said. If someone has gone back to smoking but still wants to quit, he may re-enroll. "Some of our most effective moderators are people who attended three clinics before they finally made it."

Failures are due to 1) lack of penetration of the smoker's introspective mind ("He's with us, but still in limbo for some reason"), 2) lack of determination to quit, and 3) not enough time and effort devoted to that individual, Dr. Cunanan said.

Smoker Becomes Expert

"My approach is to let the smoker become the expert, but with the right guidance. We don't turn loose untrained moderators. They know the principles of the program and how to interact with people who have a problem. Group dynamics are very important."

Asked why so many other clinics get poor results, Dr. Cunanan added: "There is no thorough one-to-one basis, no buddy system, no sensitive moderators, and nothing to reinforce the smoker's determination to quit."

Teratoma Removed

His bulging right eye protected by a make-shift covering, seven-day-old patient rested in Mass. General Hospital's newborn intensive care unit, pending successful removal of a teratoma larger than a lemon.

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Medical Tribune
and Medical News
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Onward the Metric System

THOSE OF US who lived through the painful period when the grains, minims, drams, scruples and ounces of the apothecary system were being superseded by the simple decimal metric system are well aware of how tenacious old measurements are. It is likely that the overwhelming success of the metric system in prescribing came about because the pharmacist for some time was rarely called upon to compound prescriptions. Almost all drugs have been prepared in their final form by pharmaceutical manufacturers who promptly used the metric system and the milligram dosages of their preparations became well known and convenient to write. But traces of the past linger on, and that is why aspirin is prescribed in a 0.325 gram dosage; a grain is 0.065 grams, so that five grains equal 325 mg.

Since 1866 the metric system has been legal, i.e., permissible in the U.S. by act of Congress. Its usage is commonplace in all scientific work but to a large extent the foot, the pound, the quart and their subdivisions and multiples have remained standard in industry until the past few years. In 1971, the Secretary of Commerce issued "A Metric American," and that was followed by governmental, educational and industrial efforts at metric conversion policies. The President has signed the Metric Conversion Act of 1975, committing this country to making the International Metric System our major system of measurement by voluntary action during the next decade in a coordinated fashion under the direction of a U.S. Metric Board.

At long last, we are joining the rest of the world in conversion to the metric system. We wish the board well. Inches, feet, yards, furlongs, miles, square rods, acres, pints, quarts, gallons will some day become obsolete and the four-minute mile will be explicable only to erudite historians.

From The Frying Pan

SOME YEARS AGO, a concerted attack against the private practice of medicine assailed it as a cottage industry or, even worse, as one of the last of the pushcart industries. After a flurry of such accusations that were repeated ad nauseam in the daily press, including its editorial columns, all this died out. Whether that reception was so tepid that the approach was abandoned for that reason is uncertain.

On the other hand, that the doctor-patient relationship is "frequently one of mutual resentment," as stated by one of its critics, remains unfortunately true. Two areas of special resentment on the part of the public are the matters of physician fees and physician availability. There are those who look upon price regulation as the way to reduce physician fees and thus reduce the ever increasing financial burden of health care, and many who think so are among those who see some form of national health insurance as the way to increase physician availability and improve medical care in general.

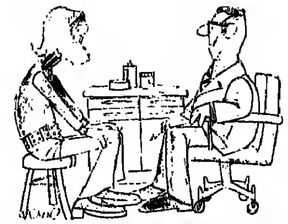
In a recent book (*Who Shall Live?*) on health, economics and social choices by an economist who is an expert on medical costs and quality, Victor R. Fuchs, Ph.D., touches on the "high fees" of physicians. He points out that, "Of every $100 spent for health in the United States only a bit over $20 goes for physicians' services, compared to more than $40 for hospital care and another $10 for drugs. After deducting legitimate expenses for rent, personnel, and supplies, physicians' incomes represent at most about 15 per cent of total health expenditures. . . . Let us assume that some way could be found to drive down physicians' fees and incomes to a 'competitive' level—that is, to a level commensurate with the training, ability, and effort of the average physician. Such a reduction, even if it cut income by 20 per cent while holding utilization constant, would reduce total health cost by only 3 per cent. Clearly the potential saving here is small."

Whether price regulation as such would succeed in even this modest reduction is overall health costs was doubted by Newhouse, Phelps and Schwartz in an article on "Policy Options and the Impact of National Health Insurance" that appeared in 1974 in the *New England Journal of Medicine*. The first two authors are economists at the Rand Corporation. What is more, their analysis showed that the various prototypical health insurance options "would greatly increase demand for ambulatory services and would stress the delivery system, with resulting increased price of physicians' services, queuing, or less physician time per patient—all without increasing total delivery of ambulatory services."

Well then, the resentments exist but the solutions are at least questionable, and it may very well be that the proposed solutions will lead from the frying pan into the fire.

Hypertension and Propranolol

CLINICAL QUOTE: *"Propranolol is on the market for other uses, but not for high blood pressure. However, aspirin is not indicated for stroke either, but it a drug is on the market and enough doctors use it as they see fit, regulators look pretty silly trying to stop them."* (Dr. John Laragh, Director, Cardiovascular Center, New York Hospital. See article on page 3.)



"That's nothing to worry about. Lots of people fall asleep during Transcendental Meditation."

LETTERS TO TRIBUNE

Three 'Horsemen of Death'

In "The Three 'Horsemen of Death': Alcohol, Tobacco and Firearms" [MT, Dec. 24], Dr. Sackler developed and painted an admirable picture of alcohol.

You did nothing for tobacco and less than nothing for your crusade against firearms. You did state that over 50,000 deaths per year on the highway had a 50% factor of alcoholic individuals; however, you say nothing in your article about 50,000 deaths in the automobile. You speak of firearm deaths, but you give no number of deaths from the firearms; yet you imply that this is a major cause of death.

My dear Doctor, you are a world leader in that you are a publisher. Why don't you stay with statistics and let free Americans be free Americans? Yes, I agree with you that alcohol to many is a crutch and a killer—and it is a major killer. Please tell us how many are killed by the alcohol, but do not imply that firearms kill such great numbers when it is really only a pitifully few. You may consider the knife, the club and many other factors as causing death, but I personally take offense at an article of this type because the three horsemen of death should be alcohol, tobacco and the automobile.

GUY O. PFEIFFER, M.D.
Matoon, Ill.

Dr. Sackler's recent article on "The Three 'Horsemen of Death'" in my opinion is so outstandingly good that it needs to be published over and over again.

I work very heavily in the field of psychosomatic medicine including dealing with alcoholism and know first hand the effects that the drug alcohol has on the human organism.

Again, congratulations on your fine article!

ROBERT B. DUNN, M.D.
Fort Worth, Tex.

More on ZPG

Dr. Sackler's column [MT, Dec. 3] completely ignores the rapid exploitation of our natural resources and the environmental pollution which accompanies population growth. What advantage is there in continuing population growth? Why should emphasis on population growth be considered a diversionary tactic that wastes energy needed for feeding our present population? The ZPG advocates certainly would appear to have unselfish motives and concern for future generations. Your naive article has rekindled my resolve to take a more active role in supporting ZPG.

M. RICHARD WALKER, M.D.
Castro Valley, Calif.

Gertrude Stein's M.D. Degree

I enjoyed Dr. Sackler's column on Gertrude Stein [MT, Apr. 2, 1975] but have one specific question which I would appreciate your answering: Did she receive her M.D. degree?

JOHN C. CHATEL, M.D.
Washington, D.C.

She was flunked by one professor which made it impossible for her to receive her degree, according to The Autobiography of Alice B. Toklas *by Gertrude Stein, page 82, Vintage Books (Random House) 1960.*—Ed.

Acupuncture and Society

Of course, acupunctural analgesia (A.A.)—the correct term—works in China [MT, Dec. 3]. But less than 20% of surgical candidates respond if preoperative analgesia and local anesthesia are *not* used. Dr. Taub correctly refers to a placebo effect. Dr. Roccia's success rate in surgery is only 15-20%. Both overlook identical success rates with hypnoanesthesia—the name of the scientifically applied placebo effect or Faith.

Every culture has its own acupuncture, and no one has a monopoly on Faith. A.A. has been explained in terms of a socio-politico-environmental conditioning, suggestion and/or hypnosis—no one knows where the former ends and the latter begins—and, most important, Schultze's Autogenic Training is a mock rehearsal of the proposed surgery.

These, together with Yoga breathing exercises, neutralize anxiety, remove the fear of the unknown and automatically raise the pain threshold which is astonishingly susceptible to psychological factors. I have done many surgical procedures without analgesia and anesthesia and can readily duplicate what is being done in China. However, A.A. is a remarkable achievement irrespective of how it is done.

What's new is old and what's old is not new!

WILLIAM S. KROGER, M.D.
Professor of Clinical Medicine
University of California
at Los Angeles

IN CONSULTATION

What's New and Important Regarding Physical Activity after Myocardial Infarction?

The Consultant

WILLIAM L. HASKELL, PH.D.
Clinical Assistant Professor of Medicine, Cardiology Division, Stanford University School of Medicine, Palo Alto, Calif.

AS A RESULT of favorable research and clinical experience, there is a definite trend in the United States towards earlier mobilization and hospital discharge of uncomplicated myocardial infarction patients. Individually prescribed inhospital exercise programs for selected patients appear safe and have documented physiologic and psychologic benefits.

During early convalescence at home, patients are instructed to maintain a regular physical activity regimen, mainly of walking, light calisthenics and household chores, with the objective of increasing functional capacity and accelerating return to work. The safety of outpatient exercise programs is enhanced by using heart rate to guide exercise intensity rather than estimates of total body energy expenditure, because of the close relationship between heart rate and myocardial oxygen consumption during dynamic large muscle exercise.

In addition to earlier mobilization of the myocardial infarction patient, the value and safety of early low-level exercise testing to objectively evalnate the patient's ability to perform light exercise has been established. At some medical centers, patients receive treadmill or bicycle ergometer exercise tests prior to hospital discharge, or as is done at Stanford, patients are tested approximately 21 days postinfarction which is usually four to six days after hospital discharge. Selected patients are exercised to a maximum heart rate of 130 beats per minute unless contraindications to continued exercise occur first (e.g., complex arrhythmias, 3+ angina, ST displacement >0.2mV, SBP drop). Data from these tests are used to objectively guide the patient's activity program for the next several weeks and to aid in determining the patient's medication regimen, especially antiarrhythmic therapy.

How soon after an acute myocardial infarction is physical activity recommended? On what basis are further increments or reductions suggested?

The uncomplicated patient should begin a program of passive and low intensity dynamic exercises within several days after hospitalization. Sitting up with feet supported ("armchair treatment" of Levine and Lown) should begin on the second or third day and assisted ambolation by day five. When discharged, many patients can perform most self-care activities, light calisthenics, walk slowly (2 mph) and climb stairs slowly or with intermittent rest pauses. Each patient's activity program should be based on his current clinical status. The activity should be performed without indications of ventricular dysfunction, PVCs, excessive heart rate increase (>25-30 beats per minute), angina or fatigue. If these signs or symptoms occur, the exercise intensity should be decreased while absence suggests adequate tolerance and that some increase can be made. Any increase in activity should be monitored by the medical staff.

What are the medical and psychologic benefits achieved by increasing physical activity after an acute myocardial infarction?

The primary benefits of early physical activity are to counter the potentially harmful deconditioning effects of prolonged bed rest and to minimize the psychologic trauma of coping with the reality of surviving the infarction. Conditions produced or aggravated by bed rest and alleviated to some extent by activity or changes in posture include: decreased cardiovascular function manifested by orthostatic hypotension, venous thrombosis, reduced lung volume, atelectasis and reduced skeletal muscle tone and joint flexibility. Psychologic benefits include frequent reductions in depression, anxiety and, possibly, denial.

What are the hazards encountered in starting physical activity after an acute myocardial infarction?

The major hazards of inappropriate exertion soon after acute myocardial infarction are considered to be the precipitation or aggravation of serious arrhythmias, congestive heart failure, aneurysm formation and cardiac rupture. By closely monitoring signs and symptoms with any new increase in activity during hospitalization, while the infarcted area is still healing, risk of these hazards appears extremely rare. Following hospitalization, the major risk is sudden cardiac arrest which can be successfully treated in most instances. But even this risk is low if the exercise is performed under medical supervision.

Has increased activity under medical supervision shown any significant effect on future cardiovascular morbidity or mortality of patients with coronary heart disease?

Whether or not a systematic increase in physical activity following myocardial infarction reduces reinfarction rate or subsequent mortality has not been established. It is unlikely that inhospital activity will reduce mortality except for deaths associated with those bed rest complications discussed above. On the other hand, there is no evidence of any excess mortality in more active patients. Studies which have randomly allocated patients to exercise or "normal care" have not observed any significant effect of exercise on mortality following hospitalization while several studies using comparison groups showed a more favorable experience for patients in cardiac rehabilitation programs which include other health habit changes in addition to exercise. The cooperative National Exercise and Heart Disease Project, now being conducted in the U.S.A., should provide a better if not definitive answer to this question.

Table from Dr. Sabin's Comments on Colds

Table 1

Infectious Respiratory Diseases and Leading Degenerative Diseases as a Cause of Illness in U.S.A. (1971 and 1972)

Disease	Millions of Days of Bed Disability		Number Died	
	1971	1972	1971	1972
Influenza + Pneumonia	206	272	56,000	62,560
Upper Respiratory	185	259	—	—
Bronchitis	27	26	5,000	5,882
Total Respiratory	**398**	**457**	**61,000**	**68,442**
Heart, Cancer, Stroke	**150**	**198**	**1,282,000**	**1,314,826**

Source: Unpublished Data from the Health Interview Survey, National Center for Health Statistics

This table, identified as Table 1 and inadvertently omitted from Dr. Albert Sabin's discussion of "uncommon colds and antibiotics" in the Feb. 4 Medical Tribune, shows that acute respiratory disease is responsible for more millions of days of bed disability in U.S.A. than all of heart disease, cancer, and stroke combined.

Next in Consultation

DR. LEO T. CHYLACK, Assistant Professor of Ophthalmology, Harvard Medical School, and Chief, Division of Ophthalmology, Peter Bent Brigham Hospital, Boston, Mass., ... will discuss what's new and important in understanding the mechanisms causing cataracts, their surgical treatment, experimental work increasing our understanding of the different forms of cataracts and their prevention, and the techniques of cataract extraction.

Migraine Seen as Biochemical Defect In Nociceptors

Medical Tribune World Service

FLORENCE, ITALY—Evidence is accumulating that migraine and other essential headache (EH) is not, as has been commonly believed, of peripheral origin, but is central pain caused by biochemical disruption of the nociceptive system, Prof. Federigo Sicuteri, department of clinical pharmacology, University of Florence, informed the first World Congress on Pain here.

Many animal and human observations, he said, suggest that the protagonist in EH is inadequate turnover of brain stem serotonin.

Animal studies have shown that reduction of cerebral serotonin (5-HT) by electrical microlesions or by drugs such as parachlorophenylalanine (PCPA) lowers the pain threshold, he said. This "dysnociception" can be corrected by 5-HT precursors, particularly 5-hydroxytryptophane.

Clinical pharmacology is able to influence the clinical picture in EH primarily through drugs which intervene in the synthesis, storage, release and activity of serotonin, he told the Congress. For example, small doses of venous reserpine or fenfluramine, which act on 5-HT brain turnover, can precipitate a headache crisis with stronger nervous reactions than those in controls.

In contrast, serotonin precursors, such as 5-hydroxytryptophane are able to improve EH, probably by increasing the 5-HT concentration, particularly if given with a decarboboxydase inhibitor.

"The incongruity between this sort of 'proserotonin' therapy and conventional treatment with antiserotonins is only apparent," he explained. "In fact, it has been demonstrated by our group in man, and subsequently by others in animals, that when clinical doses, similar to those expected or evaluated in plasma during conventional therapy, of ergotamine or methysergide are tested, a net facilitation of 5-HT can be demonstrated on the vascular receptors instead of an antiserotonin effect obtained with higher, non-clinical amounts."

Book Digest

Anatomy, A Regional Atlas of the Human Body (Sobotta Plates Organized in One Volume Regional Atlas) by Carmine D. Clemente, Ph.D., Lea & Febiger, Phila., $24.50

From Dr. Clemente's Prefnce:

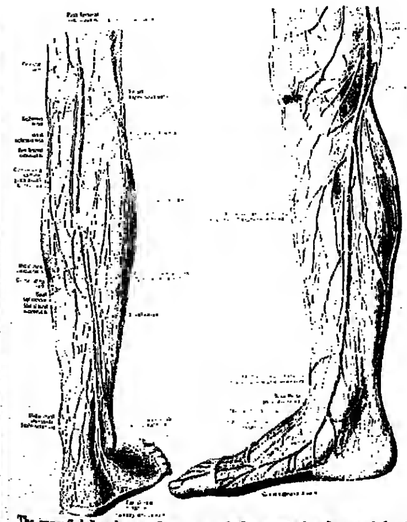
"...while a student at the University of Pennsylvania, I marveled at the clarity, completeness, and boldness of the anatomical illustrations of the original German editions of Professor Johannes Sobotta's Atlas and their excellent three-volume, English counterparts...before World War II these atlases were the most popular ones consulted by American medical students.

...with the advent of other anatomical atlases, the shortening of courses of anatomy in the medical schools, and the increase in publishing costs, the excellent but larger editions of the Sobotta atlases have become virtually unknown to a full generation of students.

With this background I enthusiastically accepted the proposal of creating a single-volume atlas from the Sobotta plates and those subsequently drawn by Professor Erich Lepier of Vienna, with the objective of making this teaching resource material once again available to American students, this time at a relatively low cost.

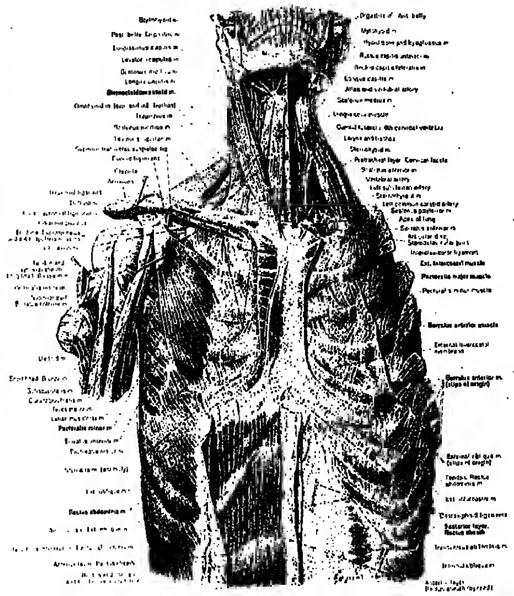
"...It is the first English edition that presents the Sobotta plates in a regional sequence—the pectoral region and upper extremity, the thorax, the abdomen, the pelvis and perineum, the lower extremity, the back, vertebral column and spinal cord, and finally the neck and head. This sequence is consistent with that followed in many courses.

English instead of Latin labels have been used in all the figures.... The index provides cross-references to the Twenty-ninth American Edition of Gray's Anatomy, making it possible for the student to obtain quickly further information..."

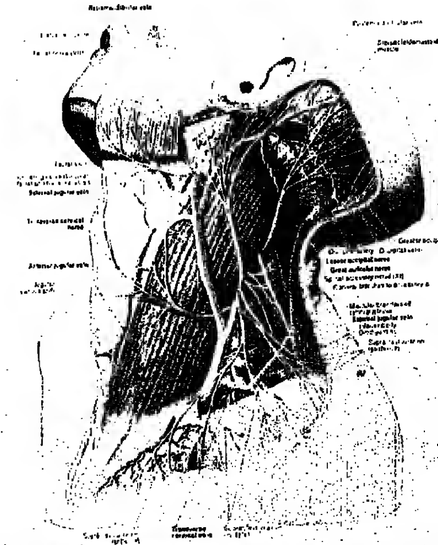


The superficial veins and nerves of the posterior leg and foot are shown on the left. Prominently seen are the small saphenous vein, which forms on the dorsolateral aspect of the foot, and the sural nerve. The figure on the right emphasizes the superficial veins and nerves on the medial aspect of the leg and foot. The formation of the great saphenous vein on the foot is displayed.

This new MEDICAL TRIBUNE *feature is not a book review, but an attempt to extract from the book itself a few quotations to show its character and possible usefulness.*



Anterior cervical, thoracic and abdominal musculature are illustrated. On the right side, shoulder and upper arm muscles are revealed following the removal of the pectoralis major muscle; the anterior layer of the rectus sheath has been opened. On the left side, the upper limb has been removed, together with the superficial trunk and cervical musculature, revealing the thoracic cage.



The nerves and blood vessels of the neck are displayed at the sternocleidomastoid layer, the platysma muscle having been reflected upward. The external jugular vein can be seen formed by the junction of the retromandibular and posterior auricular veins. The cervical branch of the facial (VII) nerve supplies the inner surface of the platysma muscle.

EDITORIAL CAPSULES

...brief summaries of editorials or comments in current medical and scientific journals.

Enough of Pessimism

"...Shortly after World War II, public opinion accorded science a high place in the scheme of things. For nearly 20 years science was exalted in the press, by the public, and by politicians. Expectations were aroused that could not be fulfilled. A swing of the pendulum was inevitable and it has been going on for about 10 years. The public has the impression that scientists, engineers, and physicians are not delivering the perfect performance that should be expected of them. At the same time relatively small side effects of new technology and medicine have appeared. In view of the insatiable need of the mass media for stories, the seriousness of these effects has been greatly exaggerated. The backward swing of the pendulum has also been abetted by some scientists who have been leaders in creating more problems and more pessimism than the facts justified.

"Pessimism is a kind of sickness that debilitates the individual and the country. One would not advocate that we become a nation of Panglasses. However, enough of pessimism. It leads nowhere but to paralysis and decay." *(Editorial, Philip H. Abelson, Science, 191:30, Jan. 9, 1976)*

Tear Gas and Cancer

"...Dr. Robert Dyer, director of the Washington, D.C., Police and Firemen's Clinic...has found an unusually high incidence of an uncommon form of skin cancer among members of the Metropolitan Police Department there. Twelve cases of malignant melanoma have come to light in a group of 4800 men. Significantly, cancers were found exclusively among policemen at one or more of the various riots and demonstrations of 1968-71 at which the police used tear gas (CN; ω-chloroacetophenone). Other officers not exposed to CN have not been affected. ...the testing of CN has been meagre and inadequate.... Dispersal takes two basic forms, mainly as a smoke from grenades and cartridges, and, in the MACE formulations, as squirts from hand-held devices. The dangers of MACE are described in a US Army technical document (EATR 4417) which was declassified in 1970. However, no data on [CN's] carcinogenic potential... appears to have been reported.

"...Dr. Dyer has stressed that his report is only preliminary, and that it might be years before any supported recommendation to withdraw CN could be made. The chemical structure of the agent suggests that the compound belongs to the group of alkylating agents of the type that can cause cancer. Chemical tests have confirmed the suggestion.

"...the plain duty...is to test CN for skin carcinogenicity and, if the tests prove positive, to publicize their results as widely as possible..." *(Comment, Robert Jones, New Scientist, 68:618, Dec. 11, 1975)*

Long-Term Heart Transplant Survivors Threatened by Atheroma

Medical Tribune Report

CHICAGO—The primary cause of death is changing from overwhelming infection to progressive, accelerated coronary artery disease in long-term (up to five years) survivors of cardiac transplants, an evaluation at Stanford University Medical Center shows.

Of the six deaths among 31 men who have lived at least 30 months, four died of atheromatous changes typical of the atheroma appearing in nontransplanted coronary artery disease.

"Because of this potential problem, we have felt it useful to perform coronary arteriography and venticulography on the transplant patients on a yearly basis," Dr. James F. Silverman, of the Stanford Department of Radiology told the Radiological Society of North America.

Forty such studies have been done without complications among a group of 16 patients surviving 32 months, Dr. Silverman said. Although the transplanted heart is denervated, the usual ischemic-type ECG changes occur as well as a mild bradycardia and transient pressure fall. The coronary circulation and ventricles respond as a normal heart to nitroglycerin.

"It is useful to consider what has happened to the 32 patients who were selected for transplantation but for whom a heart did not become available," said Dr. Silverman. "Only 16% survived three months."

Of 90 patients receiving transplants at Stanford over the last eight years, 31 are surviving one to 68 months. About half the deaths occur in the first three months. If the patient survives three months, he has a 75% chance of living three years, the Stanford statistics show.

Increasing Lysine Yield

Medical Tribune World Service

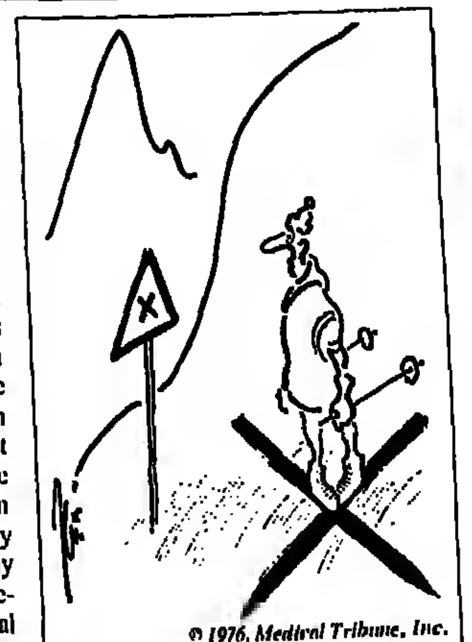
MEXICO CITY—A low-cost way of increasing by 25% the lysine content in yeast was described here at the First Chemical Congress of the North American Continent. The method includes manipulating temperature and acidity during fermentation with glucose, reported Robert D. Tanner, Ph.D., of Vanderbilt University, Nashville, Tenn.

Temporal Artery Bypass Betters Speech, Motor Deficits After Cerebral Thrombosis

Medical Tribune World Service

PRAGUE—Central nervous system functions that become impaired after cerebral thrombosis can in many instances be at least partly improved by a microsurgical bypass operation in which temporal artery blood flow is joined to that of the temporal branch of the medial cerebral artery, according to Dr. Stephan Palkovic, of the Department of Neurosurgery, Bratislava (Czechoslovakia) University Medical School. Improvement in speech and motor defects occurred in 75% of 27 patients who underwent the microsurgery, Dr. Palkovic reported at the recent meeting of the International Congress of Pathophysiology.

Improvements were noted even though some of the operations were carried out several years after the establishment of a steady state of brain malfunction, Dr. Palkovic said. This suggests that a state of relative hypoxia may be induced in surrounding tissue to the site of the original lesion, which results in functional neuron loss, but not in loss of recuperative power of the hypoxic area. Evidently, renewal of an adequate oxygen supply to this "grey area" about the site of a lesion may return part of the malfunctioning region to full activity, even after several years of hypoxia.



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Tribune Economic Analysis

Inflation or Growth: Double—or Nothing

BY ELIOT JANEWAY
Consulting Economist

A statistical complication blurs the contrast between the recently reported 12% increase in New York's cost of living, and the 8.4% rate of increase everywhere else. The New York computation includes northeastern New Jersey, which is presently in even worse shape than New York City.

Gas and electricity have been the main sources of the cost-of-living increases. Their latest jump is a prediction of still more to come. Increased fuel and tax costs have been particularly onerous for the utilities in the last several years. The meter rate increases being granted utilities are now catching up with the cost-push that hit them prior to 1973; and the cost increases absorbed by utilities in the interim won't be picked up in the cost-of-living tabulations until next year or the year after.

The other two main ingredients of the recent cost-of-living increases are property taxes and insurance costs. Property taxes rose, and insurance costs rose too. The insurance companies in the casualty business are losing their shirts; their only recourse is to raise rates faster than they pay claims.

The dismal inflationary trend in the New York metropolitan area will do little to relieve hard-hit family budgets and incomes. Americans are now up against a double-or-nothing proposition: getting back to growth or being stuck with inflation. The grisly experience of New York losing out on all sides proves it.

Ask Janeway

I am age 62, and have four income producing properties, mostly industrial. These are free of debt and comprise about one-third of my estate. When I retire in a year or two, should we use the rents as retirement income or should I sell and put the money in securities or other investments? The rents now, when all properties are rented, are more than enough to support my wife and self.

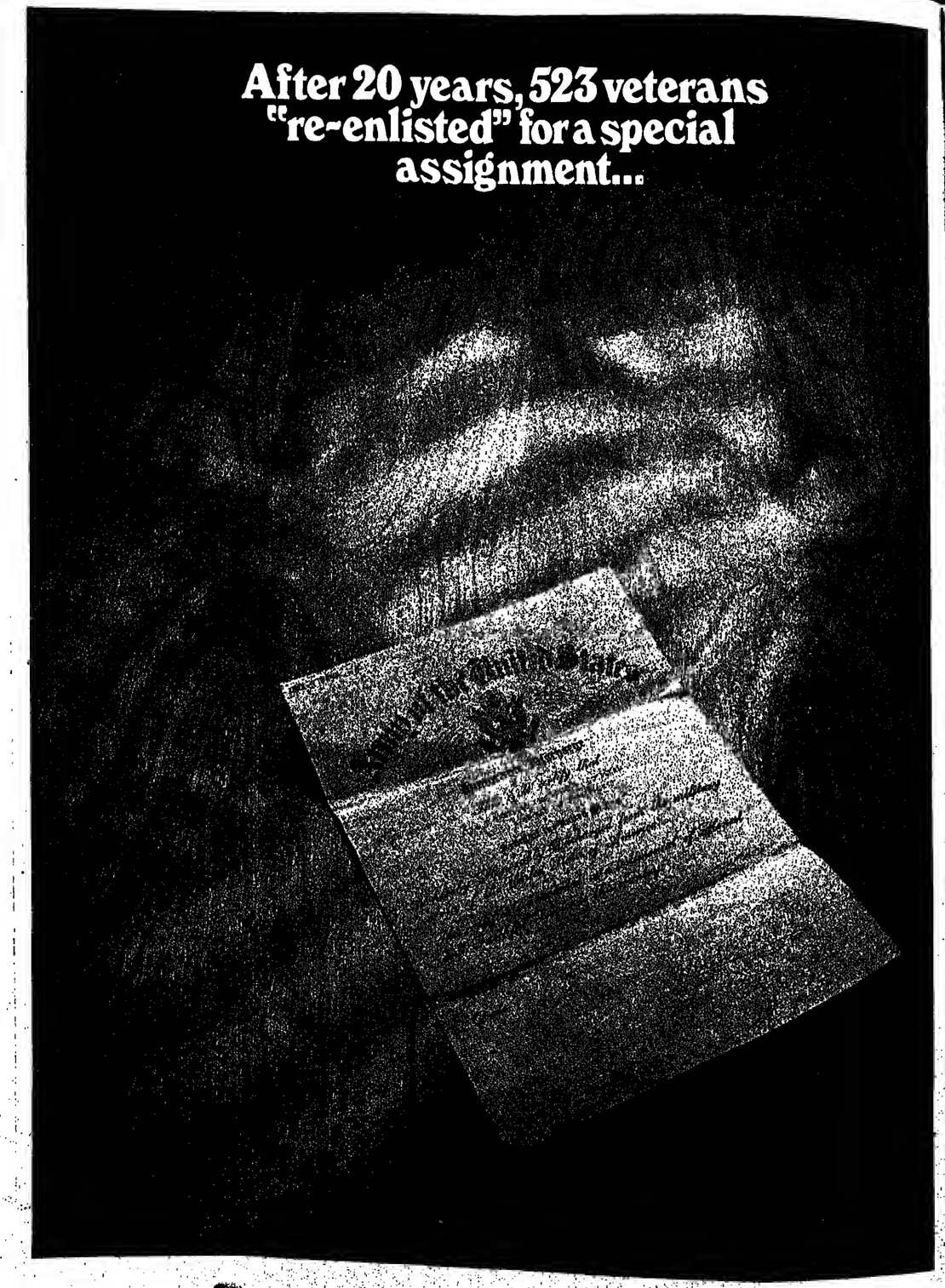
Your opinion and advice will be appreciated. Thanks for your helpful and interesting column in MEDICAL TRIBUNE.

California M.D.

With so many tenants of industrial properties suffering from liquidity problems, you would be better off selling if you can get acceptable bids. Moreover, the shelter you could get would be worth more to you now in your earning years than after you retire. Once you are retired, you will want to avoid the risk built into income property which you could write off now.

Send your questions on finances, investments, taxes to Janeway, MEDICAL TRIBUNE, *880 Third Avenue, New York, N.Y. 10022*

After 20 years, 523 veterans "re-enlisted" for a special assignment...



The assignment: combat hypertension

The VA studies showed it had to be controlled.

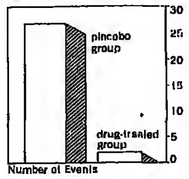
Long after World War II, large numbers of veterans were enrolled in what have since become known as landmark studies in the treatment of hypertension.

The VA studies[1,2] established that even moderately elevated blood pressure increases the risk of target-organ damage and death—and that hypertension should be treated in order to reduce morbidity.

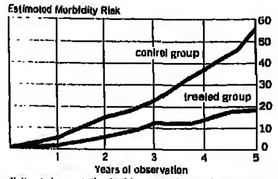
In the earlier study,[1] covering a two-year period, 143 male veterans with diastolic pressures averaging 115 through 129 mm Hg were randomly assigned to either placebo or active treatment. The study showed significant benefits to the drug-treated group.

The second study[2] covered a five-year period and involved 380 patients with milder hypertension (diastolic pressures averaging 90 through 114 mm Hg). Here, too, active drug treatment was beneficial; thus the estimated five-year risk of developing a morbid event was reduced from 58% to 18%.[2]

Morbid events in patients with diastolic pressures averaging 115-129 mm Hg. In the placebo-treated group, there were 27 morbid events, 4 of them fatal; in the drug-treated group, there were five complicating events. (Adapted[1])



Estimated Morbidity Risk



Estimated cumulative incidence of *all* morbid events over a five-year period for patients with diastolic pressures averaging 90-114 mm Hg. (Adapted[2])

Control was achieved with:[3]

hydrochlorothiazide

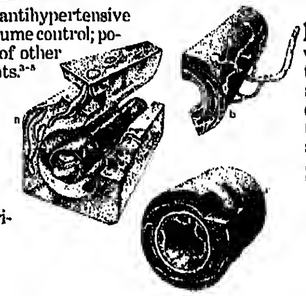
which provides a mild antihypertensive effect through fluid volume control; potentiates the activity of other antihypertensive agents.[3-5]

(a) Symbolized reduction in circulating fluid volume

plus hydralazine

the unique action of oral hydralazine lowers blood pressure through direct arteriolar vasodilation to reduce peripheral resistance.[3-5]

(c) Diagram of relaxed arteriole



plus reserpine

which lowers blood pressure through sympathetic inhibition;[3-5] also produces a central sedative effect which may prove particularly useful in the management of the stress-reactive patient.

(b) Schema of norepinephrine depletion at sympathetic nerve ending

Only one antihypertensive agent contains all three components used in two published VA cooperative studies.[3]

In the VA studies, Ser-Ap-Es itself was not used. However, all the components of Ser-Ap-Es were used in varying combinations.[1,2]

Ser-Ap-Es contains all the antihypertensive medication many patients will need.

And when the dosage of each component corresponds to the dosage preestablished by individualized titration, Ser-Ap-Es may prove more convenient and more economical.

The basic drugs used in the VA studies—hydrochlorothiazide, reserpine, and hydralazine—are original products of CIBA research.

Note: Use Ser-Ap-Es cautiously in patients with advanced renal damage or cerebrovascular accident. Discontinue at first sign of mental depression.

Please turn page for brief prescribing information.

Ser-Ap-Es

reserpine 0.1 mg
hydralazine hydrochloride 25 mg
hydrochlorothiazide 15 mg

CIBA

References
). Effects of treatment on morbidity in hypertension: Results in patients with diastolic blood pressure averaging 115 through 129 mm Hg. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 202:1028-)34, 1967.
2. Effects of treatment on morbidity in hypertension: II. Results in patients with diastolic blood pressure averaging 90 through 114 mm Hg. Veterans Administration Cooperative Study Group on Antihypertensive Agents. *JAMA* 213:1143-1152, 1970.
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Ser-Ap-Es®

reserpine 0.1 mg
hydralazine hydrochloride 20 mg
hydrochlorothiazide 15 mg

WARNING
This fixed combination drug is not indicated for initial therapy of hypertension. Hypertension requires therapy titrated to the individual patient. If the fixed combination represents the dosage so determined, its use may be more convenient in patient management. The treatment of hypertension is not static, but must be reevaluated as conditions in each patient warrant.

INDICATIONS
Hypertension. (See box warning.)
CONTRAINDICATIONS
Reserpine: Known hypersensitivity; mental depression (especially with suicidal tendencies); active peptic ulcer; ulcerative colitis; electroconvulsive therapy.
Hydralazine: Hypersensitivity; coronary artery disease; mitral valvular rheumatic heart disease.
Hydrochlorothiazide: Anuria; hypersensitivity to this or other sulfonamide-derived drugs. The routine use of diuretics in an otherwise healthy pregnant woman with or without mild edema is contraindicated and possibly hazardous.
WARNINGS
Reserpine: Use with extreme caution in patients with a history of mental depression. Discontinue at first sign of despondency, early morning insomnia, loss of appetite, impotence, or selfdepreciation. Drug-induced depression may persist for several months after drug withdrawal and may be severe enough to result in suicide. MAO inhibitors should be avoided or used with extreme caution.
Hydralazine: Hydralazine may produce in a few patients a clinical picture simulating systemic lupus erythematosus. In such patients hydralazine should be discontinued unless the benefit to risk determination requires continued antihypertensive therapy with this drug. Symptoms and signs usually regress when the drug is discontinued but residua have been detected many years later. Long-term treatment with steroids may be necessary.
CBC's, L.E. cell preparations, and antinuclear antibody titer determinations are indicated before and periodically during prolonged therapy with hydralazine or if the patient develops any unexplained signs or symptoms.
A positive antinuclear antibody titer and/or positive L.E. cell reaction requires that the physician carefully weigh the implications of the test results against the benefits to be derived from antihypertensive therapy with hydralazine.
Use MAO inhibitors with caution.
Hydrochlorothiazide: Use with caution in severe renal disease. In patients with renal disease, thiazides may precipitate azotemia. Cumulative effects of the drug may develop in patients with impaired renal function.
Thiazides should be used with caution in patients with impaired hepatic function or progressive liver disease, since minor alterations of fluid and electrolyte imbalance may precipitate hepatic coma.
Thiazides may be additive or potentiative of the action of other antihypertensive drugs. Potentiation occurs with ganglionic or peripheral adrenergic blocking drugs.
Sensitivity reactions are more likely to occur in patients with a history of allergy or bronchial asthma.
The possibility of exacerbation or activation of systemic lupus erythematosus has been reported.
Usage in Pregnancy
Reserpine: The safety of reserpine for use during pregnancy or lactation has not been established; therefore, the drug should be used in pregnant patients or women of childbearing potential only when, in the judgment of the physician, it is essential to the welfare of the patient. Increased respiratory tract secretions, nasal congestion, cyanosis, and anorexia may occur in neonates and breast-fed infants of reserpine-treated mothers since reserpine crosses the placental barrier and appears in maternal breast milk.
Hydralazine: The drug should be used only when, in the judgment of the physician, it is deemed essential to the welfare of the patient.
Hydrochlorothiazide: Usage of thiazides in women of childbearing age requires that the potential benefits of the drug be weighed against its possible hazards to the fetus. These hazards include fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult. Thiazides cross the placental barrier and appear in cord blood.
Nursing Mothers
Thiazides appear in maternal breast milk.
PRECAUTIONS
Reserpine: Use cautiously in patients with history of peptic ulcer, ulcerative colitis, or gallstones (biliary colic may be precipitated).
Exercise caution when treating hypertensives with renal insufficiency. Use cautiously with digitalis and quinidine.
Intraoperative hypotension has occurred in hypertensive patients receiving rauwolfia preparations, but withdrawal of reserpine does not assure that circulatory instability will not occur in such patients.
Hydralazine: Use cautiously in suspected coronary artery or other cardiovascular disease, cerebral vascular accidents, and advanced renal damage. Postural hypotension may occur, and the pressor response to epinephrine may be reduced. Peripheral neuritis, evidenced by paresthesias, numbness, and tingling, has been observed. Published evidence suggests an antipyridoxine effect and addition of pyridoxine to the regimen if symptoms develop.
Blood dyscrasias, consisting of reduction in hemoglobin and red cell count, leukopenia, agranulocytosis, and purpura, have been reported. If such abnormalities develop, discontinue therapy. Periodic blood counts are advised during prolonged therapy.
Hydrochlorothiazide: Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals. Observe patients for clinical signs of fluid or electrolyte imbalance (hyponatremia, hypochloremic alkalosis, and hypokalemia). Serum and urine electrolyte determinations are particularly important when the patient is vomiting excessively or receiving parenteral fluids. Medication such as digitalis may also influence serum electrolytes. Warning signs are dryness of mouth, thirst, weakness, lethargy, drowsiness, restlessness, muscle pains or cramps, muscular fatigue, hypotension, oliguria, tachycardia, and gastrointestinal disturbance such as nausea or vomiting.
Hypokalemia may develop with thiazides as with any other potent diuretic, especially during brisk diuresis, when severe cirrhosis is present, or during concomitant administration of steroids or ACTH.
Interference with adequate oral intake of electrolytes will also contribute to hypokalemia. Digitalis therapy may exaggerate metabolic effects of hypokalemia especially with reference to myocardial activity.
Any chloride deficit is generally mild and usually does not require specific treatment except under extraordinary circumstances (as in liver diseases or renal disease). Dilutional hyponatremia may occur in edematous patients in hot weather; appropriate therapy is water restriction rather than administration of salt, except in rare instances when the hyponatremia is life-threatening. In actual salt depletion, appropriate replacement is the therapy of choice.
Transient elevations in plasma calcium may occur in patients receiving thiazides, particularly in those with hyperparathyroidism. Pathological changes in the parathyroid gland have been reported in a few patients on prolonged thiazide therapy.
Hyperuricemia may occur or frank gout may be precipitated in certain patients. Insulin requirements in diabetic patients may be increased, decreased, or unchanged. Latent diabetes may become manifest during thiazide administration.
Thiazide drugs may increase the responsiveness to tubocurarine. The antihypertensive effects of the drug may be enhanced in the post-sympathectomy patient. Thiazides may decrease arterial responsiveness to norepinephrine. This is not sufficient to preclude effectiveness of the pressor agent for therapeutic use.
If nitrogen retention indicates onset of progressive renal impairment, consider withholding or discontinuing diuretic therapy.
Thiazides may decrease serum PBI levels without signs of thyroid disturbance.
ADVERSE REACTIONS
Reserpine: Gastrointestinal—hypersecretion; nausea; vomiting; anorexia; diarrhea. *Cardiovascular*—slight slowing of pulse; arrhythmias (particularly when used concurrently with digitalis or quinidine); bradycardia. *Central Nervous System*—drowsiness, depression; nervousness; paradoxical anxiety; nightmares; rare parkinsonian syndrome and other extrapyramidal tract symptoms. *CNS sensitization* (manifested by dull sensorium, dosiness, gleucoma, uveitis, and optic atrophy). *Miscellaneous*—frequently nasal congestion; pruritus; rash; dryness of mouth; dizziness; headache; dyspnea; syncope; ataxia; purpura and other hematological reactions; impotence or decreased libido; dysuria; muscular aches; conjunctival injection; weight gain; breast engorgement; pseudolactation; gynecomastia; rarely water retention with edema in hypertensive patients.
Hydralazine: Common—headache; palpitations; anorexia; nausea; vomiting; diarrhea; tachycardia; angina pectoris; nasal congestion; flushing; lacrimation; conjunctivitis; peripheral neuritis, evidenced by paresthesias, numbness, and tingling; edema; dizziness; tremors; muscle cramps; psychotic reactions characterized by depression, disorientation, or anxiety; hypersensitivity (including rash, urticaria, pruritus, fever, chills, arthralgia, eosinophilia, and, rarely, hepatitis); constipation; difficulty in micturition; dyspnea; paralytic ileus; lymphadenopathy; splenomegaly; blood dyscrasias, consisting of reduction in hemoglobin and red cell count, leukopenia, agranulocytosis, and purpura; hypotension; paradoxical pressor response.
Hydrochlorothiazide: Gastrointestinal—anorexia, gastric irritation, nausea, vomiting, cramping, diarrhea, constipation, jaundice (intrahepatic cholestatic), pancreatitis. *Central Nervous System*—dizziness, vertigo, paresthesias, headache, xanthopsia. *Dermatologic-hypersensitivity*—purpura, photosensitivity, rash, urticaria, necrotizing angiitis, Stevens-Johnson syndrome, and other hypersensitivity reactions. *Hematologic*—leukopenia, agranulocytosis, thrombocytopenia, aplastic anemia. *Cardiovascular*—orthostatic hypotension may occur and may be potentiated by alcohol, barbiturates, or narcotics. *Other*—hyperglycemia, glycosuria, hyperuricemia, muscle spasm, weakness, restlessness. Whenever adverse reactions are moderate or severe, reduce dosage or withdraw therapy.
DOSAGE
As determined by individual titration (see box warning).
Usual dosage is 1 or 2 tablets t.i.d. For maintenance, adjust dosage to lowest patient requirement. When necessary, more potent antihypertensive may be added gradually in dosage reduced by at least 50 percent.
HOW SUPPLIED
Tablets (dark salmon pink, dry-coated), each containing 0.1 mg reserpine, 25 mg hydralazine hydrochloride, and 15 mg hydrochlorothiazide; bottles of 30, 60, 100 and 1000.
Consult complete literature before prescribing.

CIBA Pharmaceutical Company
Division of CIBA-GEIGY Corporation
Summit, New Jersey 07901

3/2045 17

Ser-Ap-Es

reserpine 0.1 mg
hydralazine hydrochloride 25 mg
hydrochlorothiazide 15 mg

...brings three modes of action to bear on hypertension

CIBA

One Man... and Medicine

ARTHUR M. SACKLER, M.D.,
International Publisher, Medical Tribune

An Open Letter to *Pravda*

DEAR EDITOR:
I would hate to see mare's milk or its derivative, kumiss, or oxygen cocktails detract from scientific detente. Despite any validly held disagreements we hold regarding our differing political systems, I have always believed that science and the humanities should serve as an essential bridge between peoples. That "bridge" as well as scientific detente are threatened under the strain of "the kumiss case."

I am referring to the reports of the controversy emanating from Moscow involving the Health Ministry and your paper. If the report is correct (and considering the quality of the man who sent the report, Robert C. Toth, I must accept it as factual until evidence to the contrary), then American scientists may have difficulty in comprehending or accepting the scientific method as it is now, once again, apparently operating in the Soviet Union.

The Mare's Milk Medicine

It seems that an article appeared in *Pravda* complaining that doctors were not making adequate use of kumiss and that the Ministry of Agriculture's horse breeding officials should plan better to "solve the kumiss production problem." I understand that Dr. S. Syagnyev, Chief of Therapeutic and Preventive Medicine of the Soviet Health Ministry, wrote you that "mare's milk is not a medicine" and that "kumiss is not a method of cure but just an ordinary food product." He further espoused the heretical position (whether with or without double-blind studies I do not know) that cow's milk kumiss is as good as mare's milk kumiss and that plenty of such yogurt-like preparations were generally available.

Pravda, as it was reported to us, "convened a panel of four specialists—an agriculture expert and three doctors, two from the major kumiss-producing area—who reaffirmed all of Kumiss's near magic powers." It was remarkable to learn that "it has been established by research that kumiss produces a toning up of the nervous system, increases oxidizing processes, regulates acid and alkaline standards and stimulates blood production. Cure of tuberculosis by kumiss is very effective." These claims of the founder of kumiss therapy related to his belief that "it feeds, strengthens and restores."

The Physician Erred

It appears that the Health Ministry collegium reviewed the matter and "after study, concluded that 'the reply of Dr. Syagayev was found to be wrong'" and that "clinical observations and the working experience of a number of medical institutions prompt the conclusion that it is expedient to use mare's milk as one of the factors intensifying the effect of chemotherapy and other methods in treating a number of chronic diseases."

It would be very helpful if *Pravda* could supply the protocols, charts and basic data for these conclusions; this would help establish the Soviet's priority for yet another breakthrough in the field of science.

It appears that the entry of mass circulation newspapers into the field of health is an infectious process. The kumiss report also brought with it the news that *Izvestia* was supporting a new therapeutic agent, the oxygen cocktail "which is made by bubbling oxygen through a frothy foam of egg white and water (or fruit juice)" and is "not only . . . beneficial to patients suffering from cardiovascular and gastrointestinal ailments, it is also good for the general health." Apparently its pediatric use is considered an aid to recovery from pneumonia, bronchitis and worms.

Once again your Health Ministry appears to have been found lacking in that its attitude was negative.

There is an interesting dialectic in this situation. While our health ministry and the Food and Drug Administration is attacked by American consumerists for *permitting* too many preparations of scientific research to be made available to the public (despite a rigorous restriction of products, keeping from American physicians a number of essential preparations available in other scientifically advanced countries), your Health Ministry is being attacked for *restricting* or at least denying claims for such outstanding chemotherapies as kumiss and the oxygen cocktail.

The noise we hear in the background seems to be laughter. I think it is Lysenko himself, and if I can make out the Russian between the paroxysms which seem to shake him, I believe he is saying, "I win again! I win again!"

P.S. We recognize that political expediency is not a phenomena restricted to the Soviet Union. While we in the U.S. do not list kumiss as a drug—yet—in our Washington Wonderland the CNS depressant drug, *ethrobol*, is classified as a "food" and the cardiotoxic and carcinogenic agent, *tobacco*, is categorized as an "agricultural product."

Frankly, we had not previously appreciated the importance of the kumiss controversy in Moscow; we were under the impression that heart disease, lung cancer and alcoholism were significant Soviet public health problems. By the way, it would be helpful if you could explain why, when you have no capitalist exploiting corporations, that the Soviet government does not act more vigorously to protect its citizens from what has been pharmacologically termed as "the two most toxic substances known to man," tobacco and alcohol.

Medicine on Stamps

Francis Bacon

Although best known as a philosopher and statesman, Francis Bacon (1561-1626) can also be considered an apostle of the academies and scientific societies whose creation and function led to the early beginnings of modern medical science and research.

Text: Dr. Joseph Klee
Stamp: Minkus Publications, Inc., New York

'Memory Metal' Tested as Vena Cava Filter

Continued from page 1

Dr. Simon explained. The wire has previously been imprinted with a mesh containing openings 2 mm square, small enough to trap even tiny emboli.

On reaching the designated position in the vena cava, the wire is extruded from the catheter and attached to the vessel wall by a tiny hook. The catheter is then withdrawn, leaving the wire in place and exposed to the temperature of the blood. At once, with enormous velocity, it loops and twists to transform itself into the pre-printed mesh, forming a barrier across the vena caval lumen. Dr. Simon presented a cineradiographic movie of the procedure that dramatically demonstrated the metal's behavior. To prevent premature transformation during the passage through the catheter, Dr. Simon said, the wire is continuously bathed in a cool solution.

"The emplacement of the filter requires no abdominal surgical procedure, or even a cutdown on a vein in the groin or neck, which is still necessary to introduce transvenous devices such as the Mobin-Uddin umbrella," the investigator commented. "Preliminary studies show that the alloy is biologically inert, nonthrombogenic, corrosion-free and abrasion-free."

The longest follow-up in animals is 15 months, with no evidence of adverse effects or dislodging. Pathologic studies have shown that the mesh is rapidly covered with an endothelial layer, as is the standard filter.

Dr. Simon stated that the mesh has been a highly efficient filter in studies using a solution of blood with coated thromboembolic particles. He expects the procedure to be suitable for clinical use within one or two years. "We anticipate that the filter will be safer, simpler and less costly than other available procedures."

"We believe that the filter represents only the first of many in vivo applications of the remarkable new thermal-memory alloys," he declared. "There are numerous other surgical devices and procedures requiring complex-shaped devices or instruments within the body which could benefit from easy insertion, using a different shape. These include devices for use in arteries, the heart, the bronchi, the skeleton and the uterus."

Among the possible applications, Dr. Simon suggested in an interview the alloy could be employed as an intra-uterine device that is inserted as a straight wire and assumes its pre-printed shape after positioning in major orthopedic surgery, it could be preformed as a rivet but implanted as a rod, thus requiring no hammering or screwing; in repair of ventricular septal defects, it could be delivered to the site in a bullet-shape and assume the desired shape after positioning.

Dr. Simon observed that the metal's mode of action is not well-understood. Professor Roy Kaplow, Ph.D., a metallurgist at MIT, is collaborating with the Harvard team in studies of the nature, behavior and limitations of the alloy. Dr. Simon said. He will also attempt to develop specific alloys to accord with medical requirements. Other collaborators are Drs. Edwin Salzman, Professor of Surgery, and David Freiman, Professor of Pathology. The medical studies are being conducted at Harvard and Beth Israel Hospital.

Autopsy view (above) and x-ray of living dog (below) show temperature-induced transformation of "memory metal" wire into mesh umbrella filter in canine vena cava.

New Life for Faltering HMOs May Hinge on Senate Action

Continued from page 1

efits enormously. But, because his subcommittee does not have jurisdiction over health insurance legislation, he could not push his bill as effectively as he wished. Instead, he embodied many of its features in the HMO development bill he had his staff draft and over which his subcommittee had jurisdiction.

The HMO bill which the Senate approved on May 15, 1973, in a 69-25 roll-call vote, represented a contraction of Senator Kennedy's original request for $805 million to $1.5 billion to be spent over three years, but otherwise it contained the basic provisions of the Kennedy bill.

Important Provisions

Among the more important of those provisions were requirements for open enrollment, a month during every year in which anyone could become an HMO member regardless of his medical history and insurability; the related community rating provision, under which health care costs are calculated on the basis of an entire community's experience rather than on the experience of specific groups, which is known as "experience rating;" federal preemption of state laws hindering HMO development; and a requirement that physicians practicing in HMOs spend at least half their time in such practice.

Also included was a broad and politically attractive package of health care benefits which would later cause much trouble.

The HMO bill developed by the Rogers subcommittee was much more restrictive. It reflected the Nixon administration's view that the Department of Health, Education, and Welfare should undertake a time-limited demonstration of the HMO concept's effectiveness, rather than the major federal initiative embodied in the Senate bill, and that after five years the government should leave the HMO field.

$375 Million Voted

This was the philosophy underlying the HMO bill that the House passed on September 12, 1973, by a 369-40 roll-call vote. It provided for $240 million to be spent over five years, deleted an original provision for federal override of state laws restricting HMOs, and contained far fewer benefits than mandated in the Senate bill.

During conference committee meetings in December, 1973, to reconcile the two versions of the legislation, the House philosophy carried the day—except that some features of the original Kennedy bill were retained.

The final conference authorization was $375 million ($430 million less than the Senate version and $135 million more than the House version) and it was to be spent over five years, after which federal assistance would be terminated and HMOs would be allowed to stand or fall on their own merits. The conference bill also eliminated a special Senate provision earmarking capitation grants to pay for the care of medically high-risk persons and greatly restricted the Senate bill's provision for overriding state laws.

Retained from the Kennedy bill were the open enrollment and community rating provisions and the requirement that physicians spend at least half their time in HMOs.

Finally, the conferees added some benefits to those in the House bill (mental health crisis care, alcohol and drug abuse treatment, and emergency medical care) but dropped some in the Senate bill (prescription drugs, vision care, and physical therapy), which they then included in a supplemental benefits package which an HMO would have to provide if a new member contracted for them at extra cost.

The conference committee filed its report on December 12, 1973, the two houses approved it overwhelmingly a week later, and President Nixon made it Public Law 93-222 by signing it on December 29.

HMO-like organizations in the United States date to the early 1900's, when some companies and labor unions began hiring physicians to care for their employees or members in group practices, and Dr. Michael A. Shadid's Farmers' Union Cooperative Health Association, organized at Elk City, Okla., in 1929, is thought to be the first true HMO. Other prepaid group practices were founded in various parts of the country before 1970 and some of them are now the nation's largest, such as the Kaiser Foundation Medical Care Program (established in 1942, also known as Kaiser-Permanente, and today the largest HMO with more than 2 million members in six areas from Cleveland to Honolulu), the Health Insurance Plan (HIP) of Greater New York, the Ross-Loos Group in southern California, or the Group Health Cooperative of Puget Sound.

The greatest HMO expansion—in numbers if not in membership—dates only from 1970, however. When President Nixon addressed Congress on the subject in early 1971, 52 such organizations existed in the country and served nearly 5 million people.

Basic Malaise

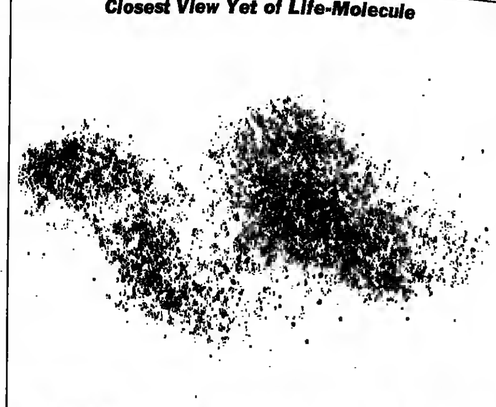
Since then the number of HMOs has increased to around 180, though collectively they have added only a little more than 2 million people to their rolls. Many observers believe that the disparity between HMO numbers and membership is a reflection of the basic malaise from which the industry now suffers and which the 1973 act has done little to cure.

Contrary to special provisions in the two-year-old law designed to promote growth of HMOs in rural areas, the vast majority are now in metropolitan centers. The average HMO's enrollment is now 10,000 members, but authorities agree that an HMO needs 30,000 members to survive. Many of the organizations are today near bankruptcy, several have closed their doors since passage of the 1973 act intended to stimulate them, and others that were planned in the early months after the law's enactment did not open because their sponsors took a closer look at their economic competitiveness and decided there was none.

The legislation passed by the House and now before the Senate is designed to rectify the faults in the 1973 act and make HMOs once again competitive with fee-for-service medicine.

A second article will examine more closely the situation since enactment of the 1973 law and discuss the specifics of pending legislation.

Closest View Yet of Life-Molecule



A single molecule of DNA was photographed using a new field ion microscopic technique that gives the greatest magnification yet—up to 10 billion x—of the components of living matter. Developed by E. S. Machlin, Ph.D., with a Columbia U. team, the technique reveals the shape of life-molecules smaller than 15 nanometers. Dots in photo are atoms making up the molecule, partially imbedded in iridium for study.

2-Stage Surgery Eases Neurinoma Removal

Medical Tribune Report

ATLANTA—A two-stage suboccipital surgical approach for removing huge acoustical neurinomas has been successfully applied in nine patients, according to three University of Pittsburgh neurosurgeons reporting here to the Congress of Neurological Surgery.

"We are pleased thus far with this technique as a means of lessening the morbidity and mortality of a potentially serious surgical procedure," said Dr. Peter E. Sheptak, Clinical Assistant Professor of Neurological Surgery at the University of Pittsburgh School of Medicine.

Previously, the most important and meticulous part of the operation—"dissection of the tumor from the brain stem with preservation of its arterial supply and the root entry zones of the involved cranial nerves"—came at the end of a long procedure, when the surgeons were quite tired, Dr. Sheptak noted.

The two-stage method, he explained, spares the surgical team the sheer exhaustion of completing the operation all at once, and often the residual tumor extrudes itself "into the vacant space of the cerebello-pontine angle left by the initial decompression the week before," making final removal much easier.

With this method and careful anesthetic management, Dr. Sheptak and his colleagues, Drs. Joseph C. Maroon and Peter J. Janetta (also of the university), have had no mortality, and only two patients lost the use of the facial nerve.

All patients, Dr. Sheptak added, had preoperative evidence of multiple cranial nerve dysfunction, and two had obstructive hydrocephalus.

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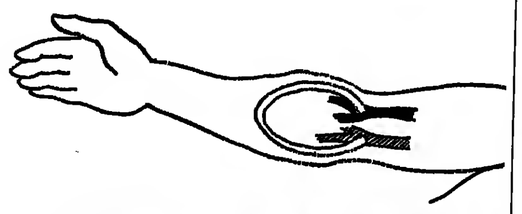
World Rehab Projects

Medical Tribune Report

UNITED NATIONS, N.Y.—A summary of information on projects and activities in the field of rehabilitation undertaken by 61 agencies and organizations throughout the world during 1974 has been issued here by the United Nations Secretariat.

The report lists projects according to region and country, with a separate compilation of inter-regional activities. It also provides brief accounts of congresses, seminars, training courses, and meetings. Addresses of all international rehabilitation organizations are included.

Bovine Graft Material Wins FDA Approval



Bovine artery heterograft has won Food and Drug Administration approval as arteriovenous shunt for kidney hemodialysis patients. Implanted subcutaneously in loop form, as shown in schematic diagram, shunt is visible as raised "bulge." Heterograft is obtained from bovine carotid arteries which are enzymatically reduced to collagen tissue and tanned.

Embolizing Bronchial Artery Averts Hypovolemic Death

Medical Tribune Report

CHICAGO — Bronchial artery embolization has been successful in preventing five inoperable patients with massive hemoptysis from succumbing to hypovolemia and "drowning in their own blood," according to a report to the Radiological Society of North America, meeting here.

The infrequently used procedure was recommended for inoperable patients by Dr. Mark H. Wholey and his colleagues at Shadyside Hospital in Pittsburgh. Dr. Wholey, Clinical Professor of Radiology at the University of Pittsburgh School of Medicine, said the procedure starts with "bronchial arteriography, . . . catheterizing all of the bronchial vessels on the involved side.

"In the event bilateral advanced disease is present and a specific side could not be identified at endoscopy because of active bleeding into the trachea, then bilateral complete bronchial arteriography is performed.

"After identifying a bleeding source the catheter is positioned to allow passage of opaque 1 mm Gelfoam strips for embolization occlusion," making sure the catheter is well within the lumen to prevent emboli from refluxing into the aorta, he said. Prior to the procedure, balloon occlusion of the bronchus on the involved side is used to control the hemorrhage.

While none of the five patients in this series suffered complications, Dr. Wholey cautioned that the procedure is "not without calculated risk." In animals, embolization has been associated with mucosal necrosis, infarction, and hind limb paralysis, he said. "The more severe complications, however, have been associated with distal occlusion and consequently occlusion near the orifice has apparently less morbidity," he added.

Four of the patients had had massive hemoptysis (loss of 600 cc of blood within 24 hours), and one had had recurrent hemoptysis, he said. Untreated massive hemoptysis, he also noted, carries a mortality rate of approximately 80%.

Coauthors were Drs. Hector Chamorro, Gopal Rao, and William B. Ford, all of Shadyside Hospital.

Abdominal Hemorrhage

► In a related report, Dr. Martin L. Goldman, Director of Vascular Radiology at Emory University's Grady Memorial Hospital in Atlanta, said he and his colleagues successfully used embolization with Gelfoam powder particles or Gelfoam sponge for control of massive abdominal hemorrhage in nine of 13 patients at high risk for surgery.

However, gastric and intestinal infarction caused the death of one patient, and another died of complications from postembolization emphysematous gastritis not considered related to the embolization, Dr. Goldman said, but noted that "The incidence of complication from this procedure, however, is yet to be determined." He observed that "during the initial part of the embolization procedure, the embolic material goes primarily to the segmental branch that is bleeding. If the procedure is stopped at this stage rebleeding is likely," he cautioned. This occurred in two patients in the series. He added that the attempt to form a more stable vessel occlusion by "continued embolization or post infusion of intra-arterial vasopressin greatly jeopardizes the visceral collaterals, therefore rendering no area more susceptible to infarction."

Currently, he added, he and his group are investigating the clinical usefulness of isobutyl cyanoacrylate, which "can provide localized and permanent vessel occlusion and therefore avoid unnecessary occlusion of collaterals."

Clinical Trials

by Oldden

TRIBUNE SPORTS REPORT

High Pre-Match Weight Loss Handicaps College Wrestlers

Medical Tribune Report

IOWA CITY—Collegiate wrestlers often compete while in a dehydrated state, the result of crash measures taken before matches to "make weight," says a team of researchers from the University of Iowa's Exercise Physiology Laboratory.

Physiologist Edward J. Zambraski, head of the team, and associates Dan T. Foster, Paul M. Gross and Dr. Charles M. Tipton, conducted a longitudinal study of 11 members of the 1974-75 UI wrestling team.

They concluded that "while the team was repeatedly capable of demonstrating a high level of proficiency (including winning the 1975 Big Ten and NCAA wrestling championships), our data suggest that these accomplishments were occurring when the wrestlers were not at an optimum physiological state."

Physiologic Effects

According to Mr. Zambraski, wrestlers often lose excessive amounts of weight (sometimes 9 to 13% of their total body weight) in a brief time interval preceding the official weigh-in. During a four-month period in the study, mean weight losses of 10.2, 9.5, 8.0, 7.5 and 7.0 lbs. were recorded in intervals of 12, four, three, two and one day, respectively.

"In view of the large amount of weight lost in a time span of 24 hours, it is unlikely that the catabolism of adipose tissue was solely responsible for these differences," says Mr. Zambraski.

Analyses of urine at various intervals during two-day time periods also indicated that "minimal weights were not reached gradually through a planned dietary program." Twenty-four hour data showed decreases in urinary volume, pH and sodium excretion and increases in specific gravity, osmolarity, creatinine, potassium excretion and leucine amino peptidase activity.

These data indicate that the wrestlers reached their desired weights through food restriction and dehydration. Furthermore, data from previous studies suggest that wrestlers are not rehydrated during the five-hour interim between weigh-in and the initial match, says Mr. Zambraski.

The research team thus concluded that the wrestlers were competing while in a dehydrated state. And "since dehydration has also been associated with decreases in muscular strength and endurance and impairment of the cardiovascular and temperature regulating systems, the Iowa wrestlers were competing at less than optimal capacities."

The researchers also noted that fluid restriction and dehydration as a way to "make weight" often begins in high school. "The effects that these practices may have on body growth and/or kidney function, when continued over several years and high school and college wrestling are not known," says Mr. Zambraski. However, he points out that increased leucine amino peptidase activity has been associated with renal ischemia as well as nonrenal disease.

Rapid and excessive weight loss, to "make weight" just prior to a match, may deprive college wrestlers of the benefits of "an optimal physiologic state."

IMMATERIA MEDICA

St. Valentine, M.D.

We are afraid that the 13-cent stamp is going to wreck love in this country. At least put a dent in its expression.

Years ago St. Valentine's Day cards were second only to Christmas cards in volume. We lost count about 1956 when some 400,000,000 were sent. Those figures looked like a lot of fun-timing because there weren't—and still aren't—that many Americans on the hoof. It's simply because a lot of people sent a lot of people cards. Love, love, love!

As every physician knows, love is a big healer. One of the Valentines from the past that we remember was made up like a prescription and titled: "Cure for Love." It listed a lot of ingredients—dislike, resolution, experience, etc.—and told the recipient to "sweeten it with the sugar of forgetfulness, skim it with the spoon of melancholy."

If you took the prescription, the card promised, you would be "restored to your right senses again." It also pointed out that "the necessary ingredients could be obtained at the Apothecary, at the House of Understanding, next door to Reason, on Prudent Street, in the Parish of Content."

All a joke, sir, but who writes prescriptions like that any more?

Only St. Valentine, M.D., and he's practically out of 13-cent stamps!

Materia Non Medica

Sooner or later, it had to happen. And now it has. The editors of the staid *British Medical Journal* have announced a new department to be titled "Materia Non Medica." Nothing particularly funny in *Upstairs, Downstairs*, but to be devoted to doctors' "non-medical pursuits." As the editors put it: "Few of us . . . are either sufficiently expert or arrogant enough to write at length on our amateur specialities: a little after-dinner chat is more in line with our inclinations." What they want to do is "to try and capture the flavour of conversation rather than scholarship." Their first contributions have been pleasant.

Long live the Queen!
Long live the Bee Em Jay!
Long live Materia Non Medica!

Two Before Bed

● On our map, Moorhead, Minn., lies just across the Red River of the North from Fargo, North Dakota, and it's from Moorhead that Dr. K. W. Covey sent us a full-page advertisement for a "beautifully reproduced and framed" set of *The Ten Commandments* which are described as "the most powerful, profound laws ever recorded in the annals of time . . ."

And then we got to thinking: Suppose Moses had had no proofreader and some of the "shalt nots" in the great Commandments had come out "shall"?

How's that for thinking the unthinkable?

● We're indebted to Dr. Joseph Schechner of Norfolk, Va., for what he gently calls "a misplaced modifier" in the opening paragraph of a *Virginian Pilot* editorial eulogizing Toynbee:

"Millions who never read a word in *A Study of History* were aware of the historian Arnold Toynbee, as millions were aware of the physicist Albert Einstein or the psychiatrist Sigmund Freud who knew nothing of their work."

Clinical Cliché

"Auto-Immune Disease"